

JPRS 74424

22 October 1979

East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 1946



FOREIGN BROADCAST INFORMATION SERVICE

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REPORT DOCUMENTATION PAGE		1. REPORT NO. JPRS 74424	2.	3. Recipient's Accession No.																		
4. Title and Subtitle EAST EUROPE REPORT: ECONOMIC AND INDUSTRIAL AFFAIRS, No. 1946		5. Report Date 22 October 1979																				
7. Author(s)		6.																				
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201		8. Performing Organization Rept. No.																				
12. Sponsoring Organization Name and Address As above		10. Project/Task/Work Unit No.																				
		11. Contract(C) or Grant(G) No. (C) (G)																				
		13. Type of Report & Period Covered																				
15. Supplementary Notes		14.																				
16. Abstract (Limit: 200 words) This serial report contains information on economic theory, organization, planning and management; major agreements on and development of trade within CEMA and outside the Bloc; articles on all aspects of the materials, services, machine, electronics, and precision equipment industries; and concepts and attainments in agriculture, forestry, and the food industry.																						
17. Document Analysis a. Descriptors <table border="0"> <tr> <td>International Affairs</td> <td>Economics</td> </tr> <tr> <td>Albania</td> <td>Technological</td> </tr> <tr> <td>Bulgaria</td> <td>Agriculture</td> </tr> <tr> <td>Czechoslovakia</td> <td></td> </tr> <tr> <td>X German Democratic Republic</td> <td></td> </tr> <tr> <td>X Hungary</td> <td></td> </tr> <tr> <td>X Poland</td> <td></td> </tr> <tr> <td>X Romania</td> <td></td> </tr> <tr> <td>Yugoslavia</td> <td></td> </tr> </table>					International Affairs	Economics	Albania	Technological	Bulgaria	Agriculture	Czechoslovakia		X German Democratic Republic		X Hungary		X Poland		X Romania		Yugoslavia	
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X Romania																						
Yugoslavia																						
b. Identifiers/Open Ended Terms																						
c. COSATI Field/Group 5C, 13I																						
18. Availability Statement Unlimited Availability Sold by NTIS Springfield, Virginia 22161		19. Security Class (This Report) UNCLASSIFIED		21. No. of Pages 58																		
		20. Security Class (This Page) UNCLASSIFIED		22. Price																		

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CHEMICAL INDUSTRY MINISTER OUTLINES FUTURE GOAL

East Berlin NEUES DEUTSCHLAND in German 7 Sep 79 p 2

[Article by Guenther Wyschofsky, minister for chemical industry: "High-quality Products for Many Industries"]

[Text] Chemical industry workers are developing an original, versatile procedure concentrating particularly on developing qualitative production factors and performance and efficiency resources. A determined effort is being made to fulfill the commitments made in the socialist "30 Good Deeds of Chemical Workers" competition on the 30th anniversary of the founding of the GDR and in the letter of 17 January 1979 from chemical workers to the general secretary of the SED Central Committee and chairman of the GDR State Council, Comrade Erich Honecker.

Over 25,000 collectives in the industry are persistently competing through high performances to meet and exceed targets. Such enterprise collectives as the Schwedt headquarters of the Petrochemical Combine, Lichtenberg Electrocoal, Boehlen "Otto Grotewohl" [Enterprise], Strassfurt Chemical Plant Construction, Schwarza "Wilhelm Pieck" Synthetic Fibers Combine--headquarters, Schwerin Plastics Processing Plant and the "Walter Ulbricht" Leuna [nitrogen-fixation] Plant are meeting and exceeding their plan targets and are significantly helping to exceed the goods production plan for the entire industry by one working day's output by the end of the year.

Regarding vital products to provide the economy with raw materials and supplies for manufacturing industries and for export and consumer goods for the population, allocation has been significantly increased over the previous year. This applies to the 110-percent increase in the case of ethylene, 122 percent for paraffins, 116 percent for low-pressure polyethylenes, 107 percent for polyurethanes, 116.4 percent for pesticides and insecticides, 105.6 percent for heavy-duty detergents and 116 percent for conveyor belts with steel-wire reinforcements. Production of consumer goods was increased by 8.4 percent. This applies particularly to products for facilitating housework, for beauty care and personal grooming, for household furnishings and for leisure time and recreation.

The high economic requirements listed in Comrade Erich Honecker's letter to workers of the Zeiss combine are also a criterion for high scientific achievements in chemical industry combines. The combat stance of collectives is geared toward stable, continual plan implementation and, at the same time, to future requirements of the international standard of performance. Thus production with a "Q" quality label was increased more than 120 percent in just the first half of the year and 517 new and manufactured products were put into production; 23 enterprises received the "Enterprise of Excellent Quality Work" title and five other enterprise collectives are competing for this distinction by the end of the year. Costs for committee services, extra work and complying with guarantees were able to be reduced by more than 3.2 percent. The planned reduction of material costs through scientific-technical achievements was attained on 30 June with M 200 million.

As the exemplary pacesetter for large-scale rationalization, the entire collective of the Schwedt headquarters of the VEB Petrochemical Combine operates with the slogan of "Few Products More." About 800 workers will be released from existing plants even during this year in order to prepare them for operating new production plants. The planned goal is to acquire about 2,400 workers by 1982 through comprehensive rationalization measures.

As a reliable partner of the national economy, the Schwarzheide Synthesis Plant VEB Combine is also steadily fulfilling the goods production plan. The collective for rationalization of the polyurethane process established the prerequisites for making it possible to increase planned capacity of 70 kilotons to production of 100 kt in 1979.

An essential task of scientific-technical progress in the industry is being accomplished with the planned implementation of process analyses. This method concentrates particularly on intensifying processes and technologies and on raising the standard of technical safety and stability in plant operations. Over a hundred such tasks are being carried out in 1979. Eight process analyses will be successfully completed in the "Walter Ulbricht" VEB Leuna Plant for the 30th anniversary of the GDR. They are making it possible, for example, to increase hydrazine production 150 percent with simultaneous minimization of capital expenditures and reduction of energy costs. Chemical industry enterprises have to provide high-quality products for the development of microelectronics. The prerequisites for this are gradually being established in close cooperation among chemical industry combines, enterprises using micro-electronics and scientists of the GDR Academy of Sciences. Thus the plant for production of trichlorosilane, for making very pure silicon, was redesigned through short-term rationalization, among other steps, and the quality and quantity of electronics demand was met. Current evidence of the constant rise of the scientific-technical standard of products and their efficient production is the more than 2,300 chemical industry exhibits at the Leipzig Fall Fair.

Another critical task consists of the concentrated continuation and completion of capital investments. In recent weeks chemical workers have been implementing a gigantic project with construction workers and installers at construction

sites to quickly put into operation important new production plants on the basis of their own research achievements. The collectives of the polymer plant in Leuna, the butadiene plant and aromatic compounds plant in Bocklen and the plant for chlorine and its secondary products in Buna have set themselves the goal of making high-quality products available to our economy right from the testing enterprise and quickly achieving, with a high degree of certainty, planned performance parameters through continual production. Fulfillment of the 1979 performance objectives will establish the prerequisites for accomplishing the demanding tasks of 1980.

Based on the joint directive for formulating the 1980 Economic Plan, the discussion on this is in full swing. The goal for 1980 consists of assuring production growth of approximately M 3.5 billion, with almost 50 percent of this through intensification and rationalization measures. Thus it has been planned, for example, to increase PVC [polyvinyl chloride] production 132.0 percent, 161.5 percent in the case of high-pressure polyethylenes, 105.7 percent for pharmaceutical products and 105.6 percent for heavy-duty detergents, and to provide them with new quality characteristics.

Scientific and technological means and efforts will be used in 1980 so that quality-label goods production will be increased by 15.7 percent, annual savings of labor time raised to 50 billion hours and annual material savings raised to approximately M 700 million.

Fifteen other enterprises are competing for the "Enterprise of Excellent Quality Work" title. Prerequisites for increasing exportation and improving its structure and efficiency are also being established at the same time.

The more than 300,000 chemical industry workers will make every effort in their productive combines in 1980, following the sound course established by the resolutions of the Ninth SED Congress, to further assure the dynamic growth of our economy.

11915

CSO: 2300

LONG TERM-TRENDS OF CHEMICAL INDUSTRY

Budapest MAGYAR KEMIKUSOK LAPJA in Hungarian No 6, 1979 pp 242-245

[Article by Laszlo Bonto: "Chief Directions in Long Term Chemical Industry Development"]

[Text] Objectives and the People's Economy Background

Before describing the chief directions of chemical industry's long term developments it is necessary to take a brief look back on the road we have traveled. Without underestimating the role of the years after the liberation, I believe it is advisable to begin the review with June 1960, from the MSZMP /Hungarian Socialist Workers Party/ Central Committee's resolution and of its implementation is that already today chemical industry is a significant factor in our people's economy.

We can substantiate this with a number of facts:

--we have a modern olefin plant which is capable of chemical industry processing of 1 million tons of gasoline. This provides the basis for the ever widening development of the petrochemical industry branch;

--our annual per capita synthetics production will reach 38 kilograms by 1980, compared to 1.2 kilograms in 1960;

--our artificial fertilizer production, calculated in agents, will reach 2 million tons by 1980;

--we have placed a modern 150,000 tons per year capacity PVC and a 200,000 ton per year capacity caustic lye plant into operation;

--we have a well trained, well prepared technical-economic directing staff. In our chemical industry today there are 7,000 university and college trained specialists employed. The skilled worker supply of the chemical industry is outstanding.

Overall, the county's chemical industry has the technical and intellectual basis which can be the foundation for the implementation of realistic long-range objectives.

It can be unequivocally determined that the 1960 chemical industry development resolution of the MSZMP's Central Committee continues to provide the direction. Chemistry and its practical applications and chemical industry are the most progressive areas of the scientific-technical revolution in the beginning of a new era in world economy. One of the most important directions of technical development in the people's economy in the future is chemical processing. The most important task today is the assurance of the continuity of development. Since material resources are not making the creation of large spectacular units possible, we must think our development thoughts in two stages. The first stage is 1981-1985 when lesser but more efficient solutions are most important. It is to be noted that the tendencies throughout the world are not towards the creation of large units, but towards the implementation of flexible units which are able to follow market requirements better.

The second stage is after 1985, when we may count on the creation of relatively large units.

The development of chemical industry cannot be examined without acquaintance with several requirements pertaining to the development of the people's economy. As starting points in the determination of the chief directions of long-range plans, the following should be taken into consideration:

1. The requirements of productivity and resources efficiency have increased. Previously, sometimes the utilization of directly applied labor, and sometimes that of stored labor were more efficient, generally in turns. Now the requirement is to increase the efficiency of both at the same time and immediately.

2. The development of the economic structure has the following requirements:

- the development of the infrastructure and of services have become key questions in increasing the standard of living. On the long range, infrastructure participating tendencies must be in the upward direction. We are continuing to consider the strategic goals of infrastructural branch development as fundamental.

- the other important requirement is the energetics raw material industry-processing industry proportion within industrial investments. In this respect we already have a certain resolution, as in energetics and partially in the basic materials industry. According to preliminary calculations, the increase in investments in the future for energetics and basic materials industry. According to preliminary calculations, the increase in investments in the future for energetics and basic materials industry will significantly surpass the rate of total investment increase, and naturally also that of the manufacturing industry.

1. The long-range plan must ensure a balanced economic development which is appropriate for socioeconomic strategy development, which resolves the balance disorder, and which takes the altered conditions system into account.

Accordingly a structural transformation must be implemented which is increasingly favorable to the growth rate of net production, and especially of net profit compared to gross production, which reduces the rate of material utilization and within which import increases should not surpass improvements in the balance status.

The Development Factors of Chemical Industry

In pointing out the chief directions of chemical industry's long range development, it is advisable to keep the following chief directions in mind:

--the development of modern, progressive manufacturing branches must be assured priority;

--the manufacture of products which reach the highest degree of refinement must be provided for, while keeping the complex materials flow of our existing basic materials manufacturing in mind;

--the "background industry branch" of chemical industry ready-made products must be developed through profitability selection;

--we must be so thrifty with the energy necessary for production that through the processing of high energy content basic materials we should increase the added value by enhancing our existing yields;

--we should provide for energy requiring products through socialist imports. Keeping our potentialities in mind, we should assure counterparts through modern, profitable, non-energy requiring chemical industry products;

--in the next 10-15 years, we are projecting the domestic manufacturing of products which can be fitted into the selected development formulated thus far;

--we are endeavoring to exploit the advantages of international division of labor to the maximum. In specialization agreements mutual deliveries must be projected over a long range.

In determining the development directions it is advisable to count on investment projections which are attuned to the people's economy's burden bearing capacity. Moreover, the production growth rate and distribution form a harmonic unity.

Experiences thus prove that chemical industry gained an advantage over other branches because it had a development conception and made preparations to enable this conceptions to be implemented in advance. Chemical industry must maintain this tempo advantage in the future also. While we do not yet

know the exact figures for the investment projections today, we can proceed with the assumption that in the future we can count on the amounts which were available in the last five-year period. Thus it is possible to prepare development variations even today.

The Development of Emphasized Manufacturing Branches

The expected chief directions of the development of certain specialty areas have already evolved from a consideration of the most important factors. These, however, cannot yet be treated as resolved problems, since those concerned must still conduct discussions about many aspects. The development direction which evolved is as follows.

Manufacturing of Basic Materials

The Council of Ministers resolution which in 1973 approved The Petrochemical Central Development Program (PKFP) was based not only on the recognition that the satisfaction of domestic petrochemical needs cannot be met exclusively through imports but also that in choosing the selective method of developing the petrochemical production structure one must make preparations to manufacture products which can be produced profitably and in high volume. The production surpluses which thus necessarily arise must be marketed in the beginning through the framework of the socialist economic intergration agreements.

A whole series of agreements, closely connected to the Hungarian-Soviet olefin agreement which laid the foundation for the PKFP, have been negotiated with socialist countries. These, at the plan coordinating negotiations conducted thus far, have without exception requested continuation and broadening beyond 1980.

Our petrochemical development is stimulated by our growing synthetics and basic material requirements. By 1990, keeping selectivity in mind, we are expected to have 600,000 tons of synthetic materials production. However, among the large volume of synthetic materials, we are not planning to continue the manufacture of polystyrene. We also do not expect to equip ourselves for domestic manufacture of acrylonitril, caprolactam* and methanol. We expect to acquire these products from socialist countries through the framework of CEMA.

In the area of olefin chemical cooperation, we are continuing to hold the cooperation which evolved with the Soviet Union as determinative. It is advisable to project development in both countries in such a way that the technical-economic basis for cooperation should remain after 1985. In Hungary, ethylene and propylene processing, and in the Soviet Union the development of olefin production capacity would provide actuality and new content to cooperation.

*We are planning to shut down production--ed.

The projected volume of petroleum refining for 1990 does not make our planning to build additional olefin producing capacities possible during this period. We are expecting our imports from the Soviet Union to fulfill our needs for olefin and we must prepare alternatives for its processing. Several alternatives must be examined from the standpoint of how the greatest people's economy achievement can be attained with "little" investment.

At the first stage, the manufacture of light density polyethylene and oxoalcohols, and increased manufacturing of polypropylene is to be examined. At the later stage the manufacture of heavy density polyethylene, ethylene oxides and its derivatives are to be examined.

In the interest of satisfying people's economy requirements arising from synthetic products, we must reckon with the development of synthetic materials processing capacities. In this way, we are expecting to facilitate the supplying of building and machine industry, agriculture and other industry branches with modern products prepared from synthetic materials. Even in the period after 1980, in aromatics manufacturing, efforts must be made to put the byproducts of the existing olefin plants to use and to exploit the potentialities latent in the projected petroleum refining. To reach this goal it must be considered as a guiding principle that pirobenzene, or rather, aromatics manufactured on reformed benzene basis reach consumption, or rather, sales as a product refined as highly as possible. Chemical industry processing of aromatics, however, can result in octane number reduction in gasoline, which must be avoided at all costs. The gas fraction of the catalytic cracking plant, planned for the post 1980 time period, which will serve to destructively utilize the heavy distillates of petroleum distillation can provide an opportunity for this. With the utilization of gas fraction for alkylate manufacturing, the opportunity for the production of high octane number gasoline mixing components becomes possible.

In the development of aromatics manufacturing, taking the preceeding into account, the examination of the following possibilities is advisable:

1. Between 1980-1985, the domestic consumption of the nearly 60,000 tons of benzol derived from pirobenzene can be increased by the entry of an additional 12,000 tons per year capacity malic acid anhydride plant and by the manufacture of intermediaries (nitrobenzol, anilin, MDI).
2. From the production of aromatics extraction plants, nearly 50,000 tons of toluene is achievable per year. This, together with the benzol can be utilized in the development of the plant protection agent industry.
3. With the isomerization of the ethyl-benzol-xylol compound remaining after the derivation of the 12-15,000 tons of orthoxylol, the possibility for the manufacturing of an additional 25,000 tons of orthoxylol and 30,000 tons of paraxylol arises. On the orthoxylol basis, the production of phthalic acid anhydride can be further increased (to a total of 45,000 tons).

The basis for the development of our synthetic fiber manufacturing can continue to be the conception that for certain types of fibers we have designated as a goal the satisfaction of only domestic requirements. In PAN fibers, in addition to the satisfaction of domestic requirements, we are also creating the capacity to ensure an exchange merchandize basis to cover our requirements for fiber types which we do not manufacture. Within the framework of the goal program, we are projecting the acquisition of raw materials for PAN fiber manufacturing from socialist countries.

The development of our artificial fertilizer industry, or rather, the order of its magnitude is determined by the artificial fertilizer needs of agriculture. In concert with crop production projections and with the chief directions of long range development, the predictable utilization of artificial fertilizer agents will turn out as follows:

Designation	1980	1985	1990
	in thousands of tons		
Total artificial fertilizer required for agriculture	1,900	2,300	2,700
From the above: N	710	860	990
P ₂ O ₅	550	680	810
K ₂ O	640	760	900

The above proportions may be modified by the spread of closed planting systems. In that case, the utilization amounts of the various fertilizers will have to be changed accordingly.

The post 1980 development conceptions of the artificial fertilizer industry are determined by long-range domestic fertilizer needs and the instruments which can be devoted to development, the possibilities of satisfying raw material and energy needs, by problems of profitability and by the further potentialities of international cooperation.

The nitrogen fertilizer supply for agriculture is assured, for the most part, until 1985 by the existing domestic production capacities and by consideration of socialist imports. To satisfy the post 1985 requirements, we are postulating the TVK-BVK artificial fertilizer manufacturing capacity's energy saving retooling, or rather, the possibilities of increasing the volume of nitrogen fertilizer shipments which are included in the Soviet-Hungarian Agrochemical Agreement.

To satisfy agriculture's needs for phosphorus fertilizers, we must rely partially on domestic production, and partially on imports not changing. The modernization of our existing manufacturing capacities becomes necessary to bring them in line with conceptions of developing a profitable production

structure. Thus it is advisable to project the conversion of our existing super phosphate plants to the manufacturing of more concentrated phosphorus fertilizers (TSP). We are planning to continue to satisfy our phosphorus fertilizer requirements from socialist imports.

The Chemical Processing Industry

With the chief development directions in mind, it is advisable to foster the production of the secondary refining specialty branches for the overwhelming portion of chemical industry as a whole.

A Central Development Program is in preparation for the development of the pharmaceutical and plant protection agent industries. We intend to develop both the pharmaceuticals and plant protection agent industries unchanged in their export orientation. In the future, the export of products to non-ruble relations must appear with increasing weight in pharmaceutical industry production.

In pharmaceutical industry development, a 140 percent growth can be planned for during the Sixth Five-Year Plan, and a 150 percent growth for the Seventh Five-Year Plan, along with the five-yearly 50 percent production increase which, for the most part, is comparable to what was projected in the plans of pharmaceuticals industry thus far. Thus the change, on the basis of experiences with natural development to date is the projected of production increase with the expectation that the investments to be implemented until 1985 will, with its beneficial effects, make the further significant increase of capitalist exports possible during the Seventh Five-Year Plan.

As far as technical content is concerned, the projected degree of production development is making an almost annual 5 percent change in merchandise selection necessary, in line with current practice. Within this framework, in addition to the 1-2 original products per year, the overwhelming portion of production is composed of the industry branch's traditional products, the export of which also plays a decisive role in capitalist relations.

Since the investment possibilities are very restricted, the development of producing enterprises can be implemented primarily within their existing plants.

The technological retooling of the pharmaceuticals industry (conversion to continuous processes, the increase of permeability capacities of devices, the introduction of programmed automation, etc.) will take place with relatively meager instruments.

There are two significant conditions for the implementation of the pharmaceuticals industry's development conceptions"

--large scale increases in the effectiveness and success of pharmaceuticals research,

--the better organization of commercial activities of foreign markets.

We intend to develop the manufacture of plant protection agents to a significant degree. We desire to export almost 60 percent of the production, in addition to satisfying 75 percent of domestic requirements. The increase in our socialist exports is making the increase of our large energy requiring product import possible to a significant degree.

Selection is continually developing, and the appearance of new, effective agents is to be expected in the world's plant protection agent industry. Thus, it is not possible to provide development goals for specific agents. The requirements of Hungarian agriculture are, however, expected to be satisfiable from the leading assortment of agents, or from their further developed variations.

As far as the chief plant protection agents are concerned, the breakdown of the expected domestic needs can be predicted according to the following:

Weed killing agents	40 percent
Pesticides	15 percent
Fungicides	40 percent
Other Agents	<u>5 percent</u>
	100 percent

According to the above, it is necessary that in the near future we produce a larger number of agents. This is motivated from the standpoint of more flexible domestic supply, and because a wider manufacturing selection can better satisfy consumer requirements. However, it is indispensable that we build better than average capacities for several agents, primarily for the Soviet, or rather, socialist market.

Increase in efficiency derived from magnitude increases is creating capacities for competing on Western markets. Thus we must endeavor to have, primarily through production or trade cooperation, dollar accounting exports from these products.

Based on the exploitation of our existing base materials, the development of intermediaries manufacturing is related to the projected development of the pharmaceuticals industry and plant protection agent manufacturing.

In the rubber industry, we are expecting powerful development in addition to the continued structural improvement in line with the already initiated selective development. It is advisable for us to have the direction of development headed in the direction of the manufacturing of modern motor vehicle tires, primarily that of the most modern construction heavy motor vehicle tires, and the manufacture of heavy duty industrial rubber articles which are required in increasingly greater volumes by the people's economy and by foreign consumers.

We are continuing to not plan the domestic manufacture of synthetic resins, and are projecting to satisfy our needs almost completely by acquisition through the framework of CEMA goal programs, or rather, through bilateral schemes.

It is apparent from the described development directions pertaining to the most significant chemical industry areas that we are projecting part of the development of chemical industry as export oriented, and part as replacing capitalist imports. The import situation which has evolved has motivated us to this end, since the people's economy's 1978 capitalist chemical industry imports exceeded 35 billion forints.

The long-range development directions of chemical industry can be described only in outline in this brief article. What we have written cannot even be called conceptions, but rather theses or ideas, the elaboration of which in many variations we must begin in the near future. We must provide development conceptions which can be supported by acceptable calculations from a profitability standpoint.

In addition to the work of the planning organizations, it is indispensable that provision be made for the involvement of an ever wider spectrum of specialists through social avenues.

The Society of Hungarian Chemists has already begun work in this direction through "round table" discussions, and intends to continue these in the future. In this way, it intends to provide assistance to the increasingly more effective and successful long-range planning of state administrative organizations.

9093

CSO: 2500

ECONOMIC SITUATION OF CHEMICAL INDUSTRY

Budapest MAGYAR KEMIKUSOK LAPJA in Hungarian No 6, 1979 pp 247-253

/Article by Janos Balassa: "Chemical Industry Development from an Economic Standpoint"/

/Text/ Looking back over the last three decades of Hungarian chemical industry's development, but especially over the period since the MSZMP's /Hungarian Socialist Workers Party/ 1960 chemical industry resolution, and examining these from an economic standpoint, we must answer the following questions, among others:

- How well did chemical industry satisfy the people's economy needs?
- How did it adapt to changes in requirements, to the evolution of internal and external production conditions?
- How effectively did the development of chemical industry proceed?
- How did its foreign trade balance turn out?
- How did it improve the situation of our workers?

To give exact, detailed, numerical answers to these questions is a rather time consuming task, since in the last 25 years such significant changes have taken place as the conversion from industrialization to industry development, from extensive to intensive management, from strictly centralized plan management to directed plan management, the preparation and 1968 introduction of the New Economic Mechanism, and the 1973-74 disintegration of the world market balance, and its restructuring. As examples, may I be permitted to submit that at the beginning of the 1960's, the structure of chemical industry was altered as a result of enterprise mergers and trust formations. The contents of investment conceptions and the calculation method for production costing changed in 1968. The factoring in of world market price changes modified the structure of chemical industry's product valuation and has made its comparison with earlier value categories more difficult.

I believe that because of the above, I may be understood and excused for opening the possibilities for the illumination of only a few elements here.

Satisfaction of Chemical Product Requirements

In the last quarter century, chemical industry in all CEMA countries was developed at a rapid rate, almost $1\frac{1}{2}$ times faster than the industry average. In Hungary, the development was even more rapid than this because of the low beginning level. As a result, from 1950 to 1977 (calculated on 1977 prices), chemical industry production rose from 4.2 billion to 110 billion forints, a 26 fold increase, compared to the 8 fold increase in total industrial production. Consequently, chemical industry's share of industrial production rose from 4.7 to 15.5 percent.

As a result of the development, the production of certain specialty branches (varnish and paint industry, the manufacture of detergents, the pharmaceutical industry) equalled the level of domestic consumption. In other branches (e.g. chemical fibers) production came closer to consumption. In other otherwise dynamically developing specialty branches, however, such as artificial fertilizers, plant protection agents, and synthetics, the portion of consumption supplied from domestic production decreased. In these areas the people's economy chemicalization moved forward at a faster rate than the development of production.

The cause of the increase in artificial fertilizer imports, the lack of phosphorus and potassium content raw materials among our natural resources, is well known. Through an examination of the imports of 5 dynamically developing modern specialty branches, it can be determined that:

--from among all chemical product imports between 1960 and 1970, we managed to halt the import increase of basic materials for synthetics and of chemical fiber products. These have gone in a decreasing direction since 1975;

--the portion of processed synthetics products, industrial catalysts and plant protection agents in chemical product imports still had an increasing tendency in 1975, although, compared to 1970, to a lesser degree. The greatest degree of increase took place during the Third Five-Year Plan.

The portion of import products belonging to the areas of the 5 observed modern specialty branches rose from 24.6 percent of the total chemical product import in 1960, to 35.6 percent in 1975.

Between 1960 and 1977, the production value of socialist chemical industry increased almost 5 fold, and the current price exports, almost 8 fold. In general, production satisfied 60-70 percent of domestic requirements. While in 1965, 63 percent of domestic consumption was covered by domestic production, in 1970 it was 73 percent, in 1975, 70 percent, but the proportion fell back to 62 percent in 1977. It requires special analysis to determine how much of the preceding was caused by world market price changes, and how much by the development of international specialization and cooperation, or other causes.

Even in principle, it would be improper to place the requirement of totally satisfying domestic chemical product needs on the country's chemical industry, since we are following an industry development policy of selectivity, not self sufficiency, and are endeavoring towards international cooperation, and primarily towards socialist production integration.

Here we shall not examine from what causes the scissors between domestic chemical industry production and chemical product consumption opens and closes. We note, however, that the scissors opening is not caused by production lags but by international specialization and cooperation, and by the socialist integration. Increase in imports is in proportion to export increases and is happening along with increasing efficiency. The development is in a healthy direction.

While it is relatively easy to determine the import proportion for domestic consumption, it is relatively difficult to establish the degree of satisfaction of internal needs. Statistics does not take account of needs not satisfied (and of the resulting losses). The sudden jump in capitalist synthetics and chemical fibers import in 1968-69 in order to exploit the possibilities of the new economic mechanism proves the existence of such hidden (and often not hidden) needs.

Adaptation to Needs and to Internal and External Conditions

Internal Conditions

Undoubtedly, the needs structure of chemical products changed from time to time and had been subordinated to industry and economic policy goals. Thus in the era of agriculture socialization, the chief goal was the increase in artificial fertilizer utilization. Later, from the end of the sixties, the conditions of intensive agriculture required increasingly more plant protection agent utilization. From the middle of the sixties, the development of modern industry, construction industry and transportation, and the increasing satisfaction of the population's needs required modern giant molecule polymers with increasing urgency.

The number one internal condition of chemical industry development, demand, existed, for the most part, with a changing and growing character and operated as a driving force throughout the whole development period.

How did the other internal conditions contribute to this? Our raw materials situation in inorganic mineral raw materials is unfavorable. It is better, however, in hydrocarbons. Our supply situation is improving through the development of close cooperation among socialist countries, although the limitations of yield and transportation have to be taken into account.

Our limited energy situation is forcing us to examine even the energy requirements of chemical industry. In 1960, chemical industry utilized 13 percent of the total energy needs of industry devoted exclusively to energetics purposes; in 1975, it also utilized 13 percent. While in 15 years,

chemical industry production increased more than 5 fold, its energy utilization rose by only 70 percent. Thus its specific energy needs decreased. In 1960, it produced one forint of national income with the expenditure of 1858 kilocalories. In 1975, it only required 442 kilocalories to accomplish the same. The structure of utilization has changed significantly. The need for basic energy sources (coal, petroleum, natural gas) decreased to almost a half, while the need for converted energy sources rose by more than 2.2 fold. Within the latter, the utilization of electrical energy tripled. Its portion of industrial usage was 8.2 percent in 1953, 9.5 percent in 1960, but rose to 20.6 percent by 1970. From then on, however, its share of consumption rose only slightly, reaching 21.6 percent in 1977.

In all events, this data admonishes us to seriously think over further development of chemical industry branches which require electrical energy.

With the development of petrochemistry, the consumption of energy source materials increased sharply. (table 1)

Table 1. Utilization of Energy Source Materials

Energy Source	Units	Year			
		1965	1970	1975	1977
Natural gas	million m ³	23	584	830	1026
				*	*
Gasoline	1000 tons	11	41	411	647

*net gasoline utilization.

Chemical industry was responsible for 13 percent of the country's total natural gas consumption in 1977. Usage of low octane gasoline as chemical raw material comprised 32 percent of the country's total gasoline consumption. Thus chemical industry's energy source utilization for raw materials became a significant factor in the country's energy balance.

This admonishes us, if possible, not to encumber additional amounts of energy source raw materials in our further development of petrochemistry, but to develop it further on the existing olefin basis.

One of the chief instruments and conditions is investment, which has received a determinate role, and has given, to a certain extent, an extensive character to chemical industry development. Monetary instruments of investment, calculated according to the comparable prices of the Fourth Five-Year Plan, and their percentage of the total investment during certain plan periods is given in table 2.

During these three five-year plan periods and in consequent years, totally and in round figures, 600,000 tons of nitrogen fertilizer, N-calculated, 148,000 tons of super phosphate (inactive ingredients), 566,000 tons of

sulfuric acid, 200,000 tons of caustic lye, 250,000 tons of ethylene, 50,000 tons of polyethylene, 180,000 tons of PVC, 6,400 tons of polyamid fibers, 11,000 tons of polyacrylonitrile fiber manufacture capacities were built, and 10 billion tons of petroleum distillation capacity was established. The retooling of the pharmaceuticals industry has been realized. We have established a nearly 560,000 tire per year truck tire manufacturing capacity, within which there is a capability for 100,000 steel radial tires. Numerous smaller plants and factories were established, mostly in rural areas. An annual 40,000 ton performance polyethylene plant began operating recently.

Table 2

Investment Amounts and Their Percentage of Industrial Investments

Period	Investment Amounts (in comparable prices)	
	Billion Forints	Percentage of industrial investment
1961-1965	17.8	15.1
1966-1970	26.5	15.1
1971-1975	39.7	19.7

The value of fixed production means necessary for 1,000 forints of production rose 9.7 percent during the Second Five-Year Plan, by 8.5 percent during the Third Five-Year Plan, but dropped by 2 percent during the Fourth Five-Year Plan. Thus, since 1965 the efficiency of fixed production means, projected against production values has increased.

The insufficiency and dispersion of implementation capacities appeared as inhibiting factors for our investments. Many funded projects, in addition to exceeding the monetary framework, were not completed with the planned complete technical content. In others, operation was delayed. The majority of our investments, however, were fruitful. Among these, the construction and putting into operation of the Tisza Chemical Complex olefin factory and the 150,000 ton PVC factory of the Borsod Chemical Complex in a rather short time, considering the domestic conditions, are outstanding. In addition to capacity and deadline problems, the unsatisfactory level of chemical industry machinery manufacturing and insufficient technical development of other machine industry branches serving the chemical industry caused difficulties.

The following served to ease these difficulties:

- a significant portion of development took place in the form of retooling older plants;
- where possible, equipment was placed out in the open;

The labor necessary for development was available to the chemical industry until 1975. Already from the beginning of the sixties, the still absorbable work force surplus was considered in locating plants. Between 1950 and 1960, the number of employed rose from, in round figures, 31,000 to 65,000, or more than doubled. Between 1961 and 1971, the increase was only 1.7 fold, while until 1975, it increased by only 7 percent. In 1976 and 1977 combined, it decreased by 3 percent. It is common knowledge that there is no longer the possibility for numerical increase in the work force in the future. Rather we must count on its decrease.

A strong intellectual capacity was available for chemical industry development. Between 1970 and 1977, research-planning activities were conducted in 6, or rather, 7 research institutes. Meanwhile, the number of researchers doubled and the number of planners increased four fold. Vigorous research planning departments also developed in enterprises, especially in the pharmaceuticals industry. The institutes of the Hungarian Academy of Sciences and university departments also assisted. The number of research successes were considerably larger than were actually implemented in the plants.

This problem, however, leads us to the problem of industrial background and infrastructure, the insufficiency of which has frustrated the timely monetary realization of numerous intellectual products, and in many respects, has had an inhibiting effect on chemical industry development and its effectiveness.

We must also mention that in the initial stage of development, the problem of environmental protection was not as strongly apparent as it is today, and the related requirements were also significantly more modest.

External Conditions

From the external conditions of chemical industry development, the following must be emphasized:

- the evolution of the world political situation,
- the utilization of the results of the scientific-technical revolution,
- the development of world market prices,
- the availability of foreign technology and equipment for purchase, but above all,
- the technical-scientific cooperation of the socialist countries united into CEMA.

The later developed greeted from the harmonization of foreign trade, the coordination of plans, the development of international specialization and cooperation, to the socialist integration contained in long-range goal programs.

Chemical Industry's Adaptation to Conditions

Chemical industry's adaptation to requirements, to external and internal conditions was many faceted, through production increases, centralization of enterprises and concentration of production.

It is characteristic of the increase of production centralization and concentration that the average size of state chemical enterprises, calculated on the basis of current price production values, increased from 45 million forints in 1950 to 146 million forints in 1960, to 321 million forints in 1965, to nearly 2 billion forints in 1977, a 44 fold increase. The average number of workers, however, increased from 281 in 1950 to 548 in 1960, to 850 in 1965, to 1525 in 1977, or a 5 fold increase. This, on the world scale, indicates a rather large degree of concentration.

Chemical industry adaptation to requirements and to internal and external conditions can best be measured by the industry's branch structure changes. Comparing the structures of 1960 and 1975, without including petroleum refining and city gas manufacturing, we can see that chemical industry's production value proportions changed in:

	From	To
--plant protection agent manufacturing	3.4 percent	4.4 percent
--synthetics manufacturing	2.2 percent	3.8 percent
--synthetics processing	2.3 percent	12.4 percent
--pharmaceuticals	17.0 percent	24.2 percent
--artificial fertilizers	13.4 percent	10.9 percent
--chemical fibers	3.0 percent	2.2 percent
--household chemical industry	7.8 percent	3.7 percent
--varnish and paint industry	6.6 percent	6.2 percent
--rubber industry	18.9 percent	10.2 percent
--manufacture of organic and inorganic basic materials	24.4 percent	16.2 percent

In order to examine the structure of chemical industry, without petroleum refining and city gas manufacturing, it is practical to break it down into heavy, light and processing industries.*

*This grouping is the editor's personal recommendation and does not correspond to either statistical rules or to the analytical units of planning.--The editor.

According to our classification, the following belong to :

heavy chemical industry:

- artificial fertilizer manufacturing,
- manufacture of synthetic raw materials,
- chemical fibers industry,
- manufacture of organic and inorganic raw materials,
- industrial gas manufacturing,
- coal processing,
- manufacture of industrial explosives.

light industry:

- manufacture of detergents,
- varnish and paint industries,
- manufacture of industrial base materials,
- manufacture of plant protection agents,
- pharmaceuticals industry,
- manufacture of refined chemicals.

processing chemical industry:

- synthetic raw materials processing,
- household and cosmetics industries,
- rubber industry,
- photo industry.

From the 1975 Input-Output Table (AKM) it can be determined that, out of the whole of chemical industry:

--heavy chemical industry, with 62 percent of gross fixed assets, 28 percent of material utilization and 28 percent of the work force is creating 30 percent of gross production value and of net social income;

--light chemical industry, with 20 percent of gross fixed assets, 45 percent of material consumption and 33 percent of the work force is creating 43 percent of gross production value and 44 percent of net social income;

--processing chemical industry, with 18 percent of gross fixed assets, 26 percent of material consumption and 39 percent of the workers produce, 27 percent of gross production value and 26 percent of net social income. (table 3)

Table 3 Investment and Accomplishments of Certain Specialized Branch Groups of Chemical Industry

Specialty	Gross Fixed Assets	Material Consumption	Worker Population	Gross Production value	Net Social Income
	Percentages				
Heavy Chemical Industry	62	28	28	30	30
Light Chemical Industry	20	46	33	43	44
Processing Chemical Industry	18	26	39	27	26
Chemical Industry Total	100	100	100	100	100

Because of the rather low investment requirement and high net social income yield, light industry was most appropriate for domestic conditions, although its rather high material consumption and work force requirements weigh rather heavily. In line with this, between 1960 and 1975, calculated on 1977 comparable prices, the proportion of light chemical industry, based on gross production value grew vigorously in the chemical industry structure.

Specifically,

--the proportion of heavy chemical industry decreased from 46 to 30 percent,

--the proportion of light chemical industry increased from 24 to 43 percent,

--the proportion of processing chemical industry decreased from 30 to 27 percent.

Thus the advance of light chemical industry, chiefly because of pharmaceutical industry and plant protection agent manufacturing development, was rather vigorous and aroused in many the demand to develop only light chemical industry. This tendency, however, is highly problematic because the raw material needs

of rapidly growing light chemical industry and the imports of heavy chemical industry products, because of that industry's falling far short of requirements, would completely upset the people's economy's foreign trade equilibrium. Because the other CEMA member states are not yet geared to satisfy the requirements for such a high volume of the needed raw materials and heavy chemical industry products, we would have to supplant our needs from the European capitalist chemical market. Moreover, the appearance of such a large demand on the European capitalist market could create large scale price increases. We must also consider that import must be counterbalanced by export, and export requires investment. While in order to complete one billion forints worth of chemical industry production, a people's economy level fixed assets of 3.1 billion forints is required, one billion forints worth of export requires 3.5 billion forints, according to the same indicator. In addition, it is doubtful whether it would always be possible to find a market for the exports we would wish to achieve.

Thus, only a proportional and not one sided industry structure, a structure which ensures undisturbed development and people's economy equilibrium will suffice for effective industry development requirements.

Our participation in CEMA makes it possible to ensure our equilibrium not only in terms of our country's, but, in many respects, in terms of CEMA, which includes the Soviet Union with its enormous resources.

The leaders of Hungarian chemical industry come forward, for the most part, as initiators in negotiating chemical industry specialization, cooperation and integration agreements. Examples of these agreements, which in the last analysis work successfully but with more or less difficulty, are the Hungarian-Bulgarian soda agreements and the Hungarian-Polish fiber and polymer chemistry agreements. International cooperation made it possible for us to forego the establishment of domestic manufacturing of calcinated soda, dyes and synthetic resins, which would have been unfavorable for us. From the total foreign trade traffic in 1977, 18.5 percent of the total export and 6.6 percent of total import were conducted on the basis of long-range agreements.

The structure of our chemical industry, especially in recent years reflects, although somewhat belatedly, the changes desired through technical advancement. Our pharmaceutical industry's progressive character, even on a world wide scale should be pointed out. This industry branch, which has long established Hungarian traditions, has always participated with great influence in chemical industry structure, and quickly assimilated the newest technical successes.

So far we have been discussing the changes in chemical industry's branch structure. From the standpoint of adaptation to circumstances, the alteration of enterprise production structure is not less important, and in any case, is more rapidly and flexibly implementable. While the changing of branch structure, for the most part, requires central resources, enterprise production structure alteration can be accomplished mostly through the enterprise's own

resources. The chief directions here are the complex utilization of materials flow, the processing of waste materials, the broadening of production selection on the basis of similar type technologies and chiefly, since the introduction of the new economic mechanism and the incentive influence of market effects, diversification such as in the development of detergent manufacturing at the Tisza bank chemical plants, and the development of plant protection agent manufacturing in factories producing organic and inorganic basic materials. The most important task, however, in the overhaul of enterprise product selection is to manufacture products which are competitive and profitably salable on any market. Unfortunately, the proportion of these in 1975, according to our assessment, made up only 29 percent of chemical industry production. Together with the product groups which could be made competitive through investments, the proportion is 74 percent.

The Problem of Efficiency

The real efficiency of chemical industry production, the people's economy effectiveness expressing the complete wage content with AKM's aid, can be measured through the so called people's economy real cost. This contains, in addition to all direct, specific wage payments, all that was paid out in the preparation of domestic products utilized by chemical industry. In addition, it also includes the wage content of imported materials, which had been invested in the preparation of exported products, as well as the wage investments necessary to bring the fixed assets into existence. By this method, it can be determined that in order to prepare 100 forints worth of chemical products (without including petroleum refining, city gas manufacturing or other chemical industries), on the basis of the full indicator, 26 forints were necessary in 1975. This is the lowest value among all industry branches and is the highest in net income earned. However, if we examine the enterprise level direct indicators, in the preparation of 100 forints worth of chemical products, we produced 25 forints of net social income in 1975. This is among the highest values between the processing and construction industries.

Because of the results of chemical industry development between 1960 and 1977, the proportion of chemical industry in the GDP /Gross Domestic Product/ produced by industry increased from 6.7 to 15.2 percent.

In addition to net social income created in chemical industry production, it must also be noted that surplus net social income is generated in the chemicalization process of the people's economy, that is, also during the consumption of chemical products. In agriculture, the cost of artificial fertilizer utilized in grain production is recovered 4-5 fold. We could not export out-of-season vegetables without the synthetic sheets used in vegetable production. In the construction industry, in prefabricated structures, PVC drain pipes and rising main pipe networks mean a combined savings of 25 percent in materials, 37 percent in installation costs and 51 percent in transportation costs, compared to asbestos cement and galvanized steel pipe installations. Numerous other examples could be mentioned from industry, transportation and other areas of the people's economy, all from the standpoint of labor productivity development.

Labor productivity is one of the most important technical economic indicators. Chemical industry productivity is in the forefront of our domestic production. Why this does not cause complacency is illustrated by the international comparisons initiated by NIM's /Ministry of Heavy Industry/ leadership. According to this, the productivity of our chemical industry is only 1/3 of that of the so-called world level. This shocking figure points to the necessity of analyzing the causes of our backwardness, and of taking the appropriate measures for its correction.

In my opinion we have huge production reserves in technological intensification and modernization (for this, it is advisable to increase the purchase of foreign licenses and know-how), in the increased capacity exploitation of production equipment, in better work organization, in the more stimulating utilization of labor standards and performance pay, in the development of enterprise and people's economy infrastructure, and in the strengthening of industry, chiefly machinery and construction industry background.

May I be permitted to mention that in 1976, only 76 percent of the planned work time basis of chemical industry's machinery and equipment was utilized. Of the losses, 33 percent were due to unexpected malfunctions and to maintenance, 13 percent were to ordering shortages (primarily in the pharmaceuticals industry), 9.4 percent to labor shortages and 6.8 percent were to material and spare parts shortages. The 79 percent capacity utilization would not be bad, strictly speaking, if the causes behind it were not shortages but trade policy goals which would make the more flexible satisfaction of requirements possible.

The possibilities in the area of organization are illustrated by the fact that in 1977, in the sphere of manual labor, 67 organizational themes were implemented, with an investment of 59 million forints, resulting in a 133 million forint production result and a 420 worker labor savings. A single example is the Biogal Pharmaceuticals Factory's ampule filling plant where, with the involvement of foreign organizers over a 10 month period, productivity was increased by 50 percent. A good portion of our chemical industry enterprises are already systematically endeavoring to reduce the worker population and to increase work productivity.

The effectiveness of chemical industry operation is reduced by the stockpiles recently increasing faster than either the gross or net production values. A 19 billion forint or 17 percent stockpile is part of the 1977 110 billion forint production value. In 1978, a 12.6 percent stockpile increase is expected with an 11 percent production increase. Our stockpiles were already considerably larger than those of capitalist countries, even before the great world market price changes. In 1972, the necessary chemical industry stockpile to produce 1 forint of GDP in Hungary was .61, while in Austria in 1974, it was .44 schilling for 1 schilling, and in Spain, it was .43 peseta for 1 peseta. The proportion of purchased and domestically produced stockpiles is also unfavorable. Compared to the Hungarian 80:20 proportion, the Austrian proportion is 52:48. The reason for this is latent in the endeavors

to overinsure the materials and parts supplies because of clumsiness in Hungarian materials supplying, and because of the insufficiency of contract discipline. As a consequence we are clumsy and require a long period of time for delivery. This places us in an unfavorable position particularly in export.

One other factor which will lower the effectiveness of investments as well as of production, not only in the chemical industry, of course, but in the utilization of chemical articles and generally in all of the people's economy must be mentioned. This is environmental protection. It is our duty to preserve the conditions for a healthy life for our descendants. During the Fifth Five-Year Plan, chemical industry enterprises devoted 3.3 billion forints to environmental protection investments, 60 percent of which went to the avoidance of water pollution and 30 percent of defense against air pollution. During the Sixth Five-Year Plan this amount will foreseeably double. Environmental protection tasks will affect chemical industry in the advance of waste free technologies, and in the development of waste processing in place of waste disposal.

Chemical Industry's Foreign Trade Balance

It is advisable to examine chemical industry's foreign trade balance without the energetics goals serving petroleum refining and city gas manufacturing. It is common knowledge that the 1973-74 capitalist world market price changes very much worsened our foreign trade balance. While in 1972 the socialist foreign currency balance for the imports of the total material requirements of chemical industry production and for the chemical articles needed to supplement the country's needs was a positive 554 billion forints (42 million rubles), in 1975 it changed to a negative 1.4 billion forint (-107 million rubles). Meanwhile the non-socialist balance deficiency increased from 1.9 billion forints (176 million dollars) to 5.2 billion forints (611 million dollars).^{*} This is the 6.6 billion forints which are attributed to chemical industry as negative foreign currency balance, although the consumer of this import is not only chemical industry but the whole chemical processing people's economy.

The foreign exchange balance of chemical industry production is considerably more favorable. In practice it covers the import needs with its own exports when its total consumption, that is, not only chemical products but mining, machine industry and agricultural product consumption are considered. In 1972 the export-import balance of chemical industry was a positive 616 billion forints, and was only a negative 134 billion forints in 1975. In detail, the socialist foreign exchange balance was a positive 1.2 billion forints (92 million rubles) in both 1972 and 1975, while the non-socialist exchange balance was a negative 563 billion forints (52 million dollars) in 1972, and

^{*}Based on the 1972 and 1975 Input-Output Table (AKM).

a negative 1.3 billion forints (153 million dollars) in 1975. This, even if it is unfavorable, is a far cry from the 5.2 billion forint (511 million dollar) non-socialist balance deficiency.

In 1977, the people's economy's chemical product export and import balance was -147 million rubles and -410 million dollars. The various imports (that is, including other than chemical products) necessary for NIM chemical industry enterprise production, compared to the total exports of these enterprises, yields approximate negative balances of 140 million rubles and somewhat more than 100 million dollars.

If we observe the post 1972 export-import growth and the capitalist and socialist world market price indexes, it can be determined that the zero bottom line of the ruble relation balance of 1972 changed to a -147 million rubles by 1977, but only 37 percent of the increase is volume increase while 63 percent is attributable to price increases. In the dollar relation, the -187 million dollar balance of 1972 worsened to a -410 million dollars by 1977. Of this increase, however, only 11 percent is the volume increase, while 89 percent is from price increases. Thus, in the last 5 years, chemical industry worsened the people's economy balance only moderately with its import volume increase.

I must remark that no industry branch can be expected to keep its foreign exchange balance in equilibrium by itself. It is the task of high level decision, based on people's economy calculations to determine what industry branches and in what relation must produce positive balances.

It is rather important to examine the effectiveness of chemical industry production together with the effectiveness of foreign trade marketing and the acquisition of chemical industry products. This perspective only began to develop in recent years. Until 1958, enterprises received neither information nor stimulus from the world market. Even the central organizations failed to attribute an unusual role to the world market situation. From 1959 to 1967, the directing organizations endeavored to consider world market conditions in their development conceptions. From 1968, industry enterprises began to have a direct interest in the import and export activities conducted on the two world markets. However, the information flow between production and foreign trade and the harmonization of interest must still be vigorously increased.

Because the world market price changes are unfavorable from our standpoint, the Hungarian-Soviet olefin and petrochemical agreements are followed with increased interest. Originally, the olefin agreement projected, for the years 1975-1977 combined 10 million more rubles worth (in round figures) of Hungarian deliveries, at prices fixed in the agreement. Despite this, the majority of shipments were conducted on the identical level, 29.7 and 29 million rubles worth, respectively. If we factor in world market price changes into CEMA's 5 year sliding average price pricing system, the 1977-78 shipments balance of the Hungarian-Soviet olefin and petrochemical agreements, calculated on sliding average prices, shows a zero balance, for the most part, either in ruble or dollar prices.

Trends in the Situation of Chemical Industry Workers

Basically, the evolution of the chemical industry workers' situation is determined by the standard of living policies of the MSZMP and the government. Meanwhile, the leaders of chemical industry have turned special attention to the life and accident protection and health maintenance of the workers who labor in chemical industry under difficult circumstances.

The average monthly wage of those employed in 1977 was 3,589 forints, 61 percent higher than in 1970, and 139 percent higher than in 1960. The average monthly wage of workers reached the 1977 3,371 forint level with a wage increase of 73 percent, compared to 1970, and 134 percent compared to 1960. Thus, between 1960 and 1970, the incomes of staff, and between 1970 and 1977, the incomes of workers wages were in the ninth place among the 19, or rather 20 industry groups, they reached sixth place in 1975. The number of per capita paid annual vacation days also increased from 17.4 to 20.4 between 1970 and 1977.

We have placed great stress upon the realization of our social policy goals. During the Fifth Five-Year Plan, we expended 4.7 billion forints for the construction of worker homes, child care facilities, resorts, plant restaurants, plant health facilities and for the modernization of transportation facilities. For their maintenance we spend approximately 1½ percent of the annual production value. Projected per employed individual, the total for social benefits and development in 1977 exceeded 11,000 forints.

The management and trade union leadership of chemical industry have turned much attention and considerable resources to labor safety and health protection. During the Fourth Five-Year Plan, we spent 3.2 billion forints for worker safety and health protection investments. For the Fifth Five-Year Plan period, we had projected 4.6 billion forints.

Unfortunately the number of accidents, in round figures, rose from 2,000 to 2,700 between 1960 and 1970, and only fell back to 2,500 by 1977.

It is also true, however, that the number of workers rose steadily until 1975. Human and family tragedies are hidden behind the dry statistical data of the annual 5 to 20 fatal accidents.

In addition to the many sided care for chemical industry workers, we must also keep in mind that they compose the most important production force, and that they are one of, if not the most important, factor in the professional-cultural levels of chemical industry development, and in the utilization of the results of the scientific-technical revolution. The fact that the proportion of skilled workers increased by 28 percent in 1950 to 30 percent in 1960, to 37 percent in 1970 indicates a significant strength increase. In 1977, 61 percent of the manual laborers were eighth grade graduates, and 17 percent had completed industrial technical school or other secondary school. It is sad, however, that there are still 22 percent of the workers who have not finished 8 grades of primary school studies.

Our universities are producing large numbers of chemical engineers for our chemical and other industries. The nearly 4,000 engineers working in chemical industry comprise a significant intellectual potential, but mostly from a one sided technical standpoint, and only slightly from an economic standpoint. This is supplemented to a significant but insufficient degree by economics technician and engineer economist training. Relatively few of our engineers or technicians know foreign languages. This has an inhibiting effect on international cooperation, and the rapid adaptation of foreign technical accomplishments. It is unfortunate that the number of economists and engineers possessing the highest degrees is not even 10 percent. Thus, the economic viewpoint which should range from instruments to the director's office is apparent only in the upper level of leadership.

Recapitulatory Assessment

Hungarian chemical industry, stimulated by the progress of chemicalization and the increasing demands for chemical industry products developed to a great extent and at a rapid rate, but the increase in needs surpassed the rate and extent of development. Domestic production satisfies nearly 2/3 of our chemical products requirements currently, while 1/3 is supplied from imports. Unfortunately, increasingly greater proportion of this import is non-socialist import.

Our chemical industry is a viable, developing system which is able to implement its goals and is adapting to internal and external conditions, although its reaction is not rapid enough and is somewhat late.

Chemical industry, because of its material transforming character and mostly closed system technology belongs among the industries leading in efficiency. Its development is not only necessary but beneficial to the people's economy. Its effectiveness increasing possibilities, however, have, as of yet, been exploited only to a limited degree.

In chemical industry's foreign trade balance, the value of exports, under current world market price conditions, nearly covers the imports. The large degree of non-socialist foreign currency balance equilibrium worsening is caused primarily by chemical product consumers outside of the chemical industry.

We consider the workers the chief production factor, as the most important production force of chemical industry, and we are bestowing on them the care required by socialist society. In addition to the achieved professional-cultural level, we must increase their professional preparation at a rapid rate, and we must develop their economic perspective.

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ROLE OF PRICES IN GUIDING AGRICULTURAL PRODUCTION NOTED

Budapest FIGYELO in Hungarian 12 Sep 79 p 11

[Article by Dr Laszlo Nemeti]

[Text] One of the important means of agricultural direction is the formulation of correct price ratios. The price ratios of recent years were characterized by the remarkably high profitability of grain production and especially wheat, coupled with the relatively high profitability of auxiliary operations and low profitability of animal husbandry.

While plant production sectors represent 52 percent of agricultural production value, they provided more than 80 percent of agricultural profits; on the other hand, animal husbandry sectors produced 48 percent of output value while their share of income was less at approximately 29 percent.

The Reasons for the Differences

One of the aims of the present producer price measures is to reduce this disproportionality and improve the income position of animal husbandry sectors. However, incentives in agriculture are influenced, aside from the profitability of various crops and products, by income per unit of cultivated land.

Even with favorable levels of profitability (40 percent), it is possible to obtain approximately 3,200 to 3,300 forints per hectare in wheat production, while the same 40 percent profitability level would provide 4,000 forints in sunflower seed production. Even at a 20 percent profitability level, it is possible to obtain an income of 10,000 to 12,000 forints per hectare in potato production.

Despite lower profitability per unit production, large scale producers prefer to produce poultry which has a higher turnover rate, while the number of pigs and feedlot capacity has not increased during the last 3 years, in spite of higher profitability. The new price ratios will provide an incentive for our large scale producers to create a production structure which provides a better reflection of national economic and export requirements.

However, the economic situation of individual sectors is increasingly being determined by cost/output ratios. Analysis of this kind of data provides the ability to evaluate the efficiency of sectors and regions.

For example, grouped according to yield levels, average corn yields were just slightly over 1.1 tons in 18 cooperatives during last year. Accordingly, production costs exceeded 500 forints. At the same time, 20 cooperatives achieved an average yield of 9.55 tons. In these cooperatives a ton of corn brought in an income of 1,000 forints. Of course, high average output requires excellent quality soils. These remarkable results were achieved by the cooperatives on land evaluated at 31.5 gold crowns.

There exist substantial differences between regions as regards conditions, economic level and sector incomes. In 1978, the cooperative average corn yield was 5.6 tons; averages for each megye were scattered between 3.55 tons (Szabolcs-Szatmar megye) and 6.9 tons (Tolna megye). Accordingly, production costs per ton were 1970 forints in Tolna megye and 3220 forints in Szabolcs-Szatmar megye.

In Szabolcs-Szatmar, Borsod and Nograd megyes corn was a loss-making crop, even in terms of megye averages. Therefore there is a need to pay more attention to local conditions during the coming period.

Way Above Average

The system of subsidies plays a significant role, along with prices, in our present system of direction. It is well-known that there exist substantial investment and operating subsidies to counterbalance agricultural price disparities and to improve incentives.

The other aim of the development of the price system has been to reduce the scope and size of subsidies. However, only partial success is possible toward this goal because the increasing use of increasingly expensive industrial materials, energy and machinery do not allow more than a small reduction in the volume of subsidies.

Despite our progressive land and income taxes, our system of prices and regulators favored the accelerated development of farms with better natural and economic conditions throughout the last decades. According to 1978 balance sheets, 38 percent of cooperative farms belonged to the category with less than 50,000 forints of income per head. These cooperatives employed 31 percent of the cooperative workforce and controlled 28 percent of fixed assets. Yet, these cooperatives received only 7.9 percent of income and 11 percent of accumulation funds. On the other hand the category with over 70,000 forints of income per head included 28 percent of cooperatives which together employed 35 percent of the workforce and 34 percent of fixed assets, obtained 55 percent of income and 55 percent of total development funds. One must note, however, that this also reflected the increasing role of efficiency in agriculture.

The analysis of income per hectare of income per worker in individual cooperatives reveals that efficiency indicator per hectare in the best state farms are more than twice the national average, while the same indicators for the best agricultural cooperatives are approximately three times higher than the national average. The same ratio characterizes the trends in development funds. Productivity and cost efficiency indicators of the best collective and state farms are also much more favorable.

For Lack of Opportunities

More detailed investigations lead to very important conclusions with regard to regional differentiation. Agricultural production structure in industrial regions has shifted towards highly mechanized and non-labor intensive grain crops. (This does not apply to agricultural cooperatives in the Budapest region which produce vegetables and flowers, as everyone knows.) On the other hand, less favorably endowed farms were left primarily with less profitable sectors (vegetables, animal feed, beef cattle). They were less capable of exploiting the opportunities offered in grain production, animal husbandry and the related profits. These farms are located far away from industrial centers, lack investment resources and are therefore unable to set up auxiliary operations, to organize direct processing, marketing and production cooperation.

Thus, differing natural and economic conditions are reflected in the structure and economic quality of agricultural production. For example, net sales income per one hectare of cultivated land was almost 3 times the 1978 national average in Pest megye, twice the national average in Konarom megye; at the same time, income per hectare was less than one-half of the national average in Borsod, Zala and Nograd megyes. Profits per hectare reveal similar tendencies. However, the main source of differentiation among farms and regions is largely the field of auxiliary operations, not agriculture. At present, more than 50 percent of the production value of the most profitable cooperatives in Pest and Nograd megye is represented by the auxiliary operations. Thus, the source of their sales income and profits is mostly their industrial operations and services, not agricultural production. At the same time, it must be noted that these industrial activities and services are serving an important national economic purpose and agricultural cooperatives, being more flexible and adaptable, are quicker to react to market demand.

Price levels which have come into existence for average conditions necessitate subsidies for production costs in about one-third of all state and collective farms. In most cases this is provided in the form of price subsidies. At the same time, farms with more favorable soil and better economic conditions have their differential supplements taken away in the form of progressive land and income taxes, the incremental income tax and production tax. Thus, the differentiating effect of prices must be counterbalanced by increasing the amount and steepness of subsidies and taxation.

What is Worth Exporting?

During the coming period, especially great attention must be paid to the analysis of the economic benefits of exports. An increasing portion of our agricultural and food industry products (40 percent at present) is sold internationally. For example, in 1978 international markets absorbed 36 percent of our wine production, 60 percent of fruits and vegetables, more than 50 percent of live steers and beef, more than 60 percent of lamb production.

According to economic calculations regarding our exports, the most favorable export items are wheat, corn, apples, sunflower seed oil, bottled wine, frozen products and processed pork.

However, the national economy needs more wider-ranging agricultural and food industry exports; therefore, less economic sectors must also be preserved in the coming years. It is already certain that development will have to be restrained in labor and resource-intensive cultivation and animal husbandry sectors. In these sectors the chief aim may be to preserve existing production levels and primarily to satisfy domestic demand.

Development must remain concentrated in sectors with favorable biological and technological conditions where it is possible to achieve improved yields and labor productivity most rapidly and with the least amount of social cost.

Our present economic situation demands that we set the direction of production development more clearly and plan rates of development realistically through a more precise analysis of domestic demand and international marketing opportunities as well as available development resources.

Our economic policies must provide more definite incentives than before to encourage the fulfillment of national economic and, in particular, export goals.

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' NEPSZABADSAG INTERVIEWS HEAD OF COAL MINING TRUST

Budapest NEPSZABADSAG in Hungarian 20 Sep 79 p 3

[Interview with Janos Seregi, director general of the Hungarian Coal Mining Trust, by Judit Kozma: "What Can We Expect From Coal Mining?"]

[Text] Coal mining lives the era of changing steps. Rapid price increases of the energy sources, increasingly difficult conditions of the energy supply have created new circumstances in our country also. The value and significance of the domestic coal resources increased. Geological research has received new impetus, construction of modern, high performance mines has begun, and the modernization of the existing ones has also accelerated. A year or two more, and the efforts expended to improve coal mining will have ripened, the first Eocene mines will begin to produce. But coal will be needed even until then, indeed more and more is necessary. How can coal mining satisfy the requirements placed on it today, and how can it do so in the coming decade? How will the role of coal change in our energy supply? How can the living and working conditions of the miners be improved, who in many places are still working under very difficult natural and technical conditions? We talked about these questions with Janos Seregi, director general of the Hungarian Coal Mining Trust.

Changing Judgement of Values

[Question] We have already talked much about the fact that the value of our coal resources has gone up, the role of coal increased. Actually, how much is the Hungarian coal worth?

[Answer] We can get an accurate answer to the question if we compare coal with other energy sources. Let us first jump back about ten years. Then domestic petroleum necessary to produce 1 million calories of heat cost 60 forints, petroleum imported from the Soviet Union 80, capitalist petroleum 90, domestic coal 120 forints. Thus it was understandable that coal was pushed into the background, since this was the energy source most expensive to produce. But since then the ratios have shifted thoroughly. While the costs of domestic petroleum and natural gas, as well as of the coal increased by only a small extent, last year for example we produced the

coal needed to generate 1 million calories for 150 forints, we could obtain Soviet petroleum to give an equivalent amount of heat as that for 240 forints, or petroleum obtained from the capitalist countries for 450 forints. With such price ratios it is worth bringing coal to the surface, and as much as possible. And not only the average coal types, but even the ones produced with the highest cost. That is, each 100,000 tons of additional coal we produce saves about 5 million dollars for our national economy, since we have to spend that much less to purchase capitalist petroleum.

[Question] Thus increasing the production is worth it. But how are the conditions for this? For a long time coal mining struggled with employment shortage problems, the situation of the branch was made difficult primarily by the pitmen getting too old, and the lack of replacements. In many places technical development did not progress at the necessary rate either. Have these problems been solved successfully?

[Answer] The 1974 government resolution concerning the development of coal mining created a much more favorable situation than we had before, today we can no longer speak of a significant shortage of employees. The decrease of employment was successfully slowed down. Earlier about 5,000 to 6,000 people left mining each year, now hardly more than 1,000. The average age is no longer increasing. We are not at the point yet where it would decrease, but more and more young people come into mining. In part this can be attributed to the fact that the branch has a future, we can provide a perspective to the young people, but naturally the program of building 10,000 apartments for the miners also played a big role. By the way, I would like to say about this that it is being carried out according to the expectations.

The technical conditions of mining work have also improved somewhat. Yet, primarily that characterizes the present situation that the increasing tasks have to be solved basically from the old mines even though they are being constantly modernized, without placing new plants into production. In recent years coal mining was able to live up to the requirements, credit for which is due mainly to the tenacity of the miners, since in order to fulfill the increasing demands they had to produce more and more even on their days off. In 1978, for example, we overfulfilled our 25.2 million ton plan by 470,000 tons, but for this our physical workers on the average agreed to work 16 overtime shifts, twice as much as in other branches of industry.

This year also the national economy's plan expects 25.2 million tons of coal, but the demands are about 300,000 tons higher than this. We are doing everything so that there would be no problems in supply. By the end of August we had overfulfilled the plan by about 63,000 tons, and in the coming months we would like to give an additional 250,000 tons more. In order to do this, thus far we produced on 9 days off, and the work of an additional 6 or 7 days off will be required. This situation, this strenuous work schedule for which the miners deserve appreciation and recognition, is expected to last a few more years. Significant change can be expected when the first Eocene mines will begin to produce.

New Mines Are Being Built

[Question] Building the new Eocene mines besides the strenuous production is no small task. How are these jobs progressing?

[Answer] As it is widely known, construction of the Markus Mountain mining operation was the first to be started in 1976. Investment work here is progressing in accordance with the projections, and what is even more, the mine builders gained about a half a year ahead of schedule at the junction opening of the two entrance establishments, the sloping shaft and the vertical entrance shaft. This provided the opportunity to shorten the deadlines. It seems at the present time that there is a realistic possibility for regular production to begin in the new mining operation earlier than had been planned, already in 1981.

Construction of the mine in Nagygyhaza began in 1977. Since then the demands for quality coal have increased so rapidly that here also we had to reconsider ways of how construction could be speeded up. The calculations show that this mine may also begin to produce sooner than the original deadline, as early as in 1981.

The Many operation will be the largest mine of the Eocene program. Preparation for the construction began with the site organization jobs, construction of the water and energy systems, and by the end of this year the sinking of the sloping shafts will also begin. We plan to place the mine into operation in 1985. The fourth mine is Lencsehegy [Lencse Mountain] II at Dorog, construction of which is expected to begin still during the time period of the Fifth Five-Year Plan, and it will be able to begin to produce at the end of the Sixth Five-Year Plan's time period. This is even more important because the production opportunities of the [now existing] mines at Dorog will significantly decrease in the coming years.

[Question] Increasing the coking coal production at Mecsek is the other large development task. How far have the jobs connected with this progressed?

[Answer] Reconstruction of the Mecsek mining operation is progressing according to plan. Its goal is to increase the present half million ton coking coal concentrate production to 670,000 tons in the first step and to 900,000 tons in the second step, thereby improving the supply of the Dunaujvaros coking plant.

The Rate of Growth

[Question] Coal production will increase by no small extent by accomplishing the above mentioned investments. In accordance with this, how will the role of coal develop in the domestic energy supply?

[Answer] I must tell you that accomplishment of the Eocene program by itself does not represent a large extent of production increase, since in the meanwhile several mines will become exhausted, production of the shafts operating today will significantly decrease. It is also a part of the picture that less of the production of the Eocene mines than had been originally planned will be available to the power plants, since the population's requirements have increased faster than had been expected. Thus, realization of the Eocene program means that the present 23 percent share coal in the energy supply will decrease to 20 percent by the turn of the millenium [sic]. That is, even though coal production will increase, the growth of energy demands will be much faster than that.

However, our country's approximately 6 billion tons of mineable coal resources make it possible to increase coal production even much more rapidly. We have worked out several alternatives in the long range program of coal mining which covers the time until the year 2000, and in accordance with these the present production--calculated in terms of heating value--may even triple, and in this case coal could cover almost one-third of the energy requirements. However, development of coal mining is very time consuming, and also the building of new mines as well as modernization of the old ones is very costly. Thus, which alternative will be carried out, how production will develop in the future, will depend on the national economy's load bearing ability.

[Question] Let us select a time point in the nearer future: according to the long range program, what will mining be like in 1990? Will the concentration of mines continue, at what rate will the existing mines be modernized?

[Answer] The program defines in detail the future of all areas. We have already talked about the new mines, by means of these the role, ratio of the Northern Transdanubian area will increase. At the same time in quite a few places, for example at the old area of Tatabanya and in Dorog production will decrease in the coming decade, and in Nograd [megye] it will stabilize at about the present level. The number of shafts will continue to decrease, but the ones which remain will work more modernly, with larger productivity. While for example in 1978 the number of shafts was 56, by 1990 this will decrease to 38. At the same time the average production of each mine will increase from the present 460,000 tons per year to 795,000 tons. Total performance will increase from today's approximately 2 tons to more than 3 tons per person per shift.

Increasing Requirements

[Question] Parallel with the technical advancements, how will the working conditions of the miners change?

[Answer] Mining work will remain mining work even decades from now, thus it will not be one of the easiest jobs. The dangers of nature will also

remain. But the character of the work will change. For example, they will be able to fight the dangers with more modern equipment, and they will be able to accomplish the same tasks more easily, with less of an effort. The heavy physical labor will be replaced by the directing and operating of machinery, the miners will be much more like industrial workers. Besides this we can say that our miners will be working in almost better air at their place of work than on the surface. We will introduce the dispatcher system and computerized control into the mines. Automated equipment will give indications of all dangers, and will at the same time also take measures against them. In connection with all these things we will also reshape the system of training miners, since increasingly better trained workers will be needed to operate the new techniques. This is at least as important as mechanization, since just like today, in the future also it will depend on the work of the miners how coal mining can satisfy its constantly increasing tasks.

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LONG-RANGE COAL PRODUCTION PROBLEMS OUTLINED

Warsaw NOWE DROGI in Polish, No 8, Aug 79 pp 137-147

[Article by Benon Stranz and Adam Szczurkowski]

[Excerpt] The global balance of reserves of the three main energy sources is 72 percent coal, 18 percent crude oil and 10 percent natural gas. Their respective shares of the total consumption in 1978 were 30 percent coal, 46 percent crude oil and 24 percent natural gas. Quite evidently, the consumption of coal, crude oil and natural gas does not much their relative portions of the total global energy reserve. It must be assumed, therefore, that in the future coal will play a larger role in meeting the world's energy demand. Forecasts of worldwide coal production based on various demographico-economic premises often contain a broad diversity of data. Nevertheless, figures released by the most authoritative institutions agree rather closely. The forecast of worldwide coal production according to the Stanford Institute is that overall 76 percent more coal will be extracted in the year 2000 than was in 1975, which breaks down to 56 percent more black coal and anthracite but 136 percent more brown coal.

Noteworthy is the prediction that production of brown coal will increase faster than production of black coal. With regard to black coal, one assumes increased production by strip mining.

Many forecasts do not close the gap in the world's energy balance. This is so because the increase in coal production is limited by financial, transportation and labor resources in individual countries. Forecasts indicate a coming energy deficit, which cannot be wiped out with present exploration. Noteworthy are also the more cautious predictions pertaining to development of nuclear power. It is predicted, instead, that the energy demand can be met largely by introduction of new feasible coal processing technologies and by treatment of oil-bearing sand.

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Black-coal deposits within Polish territory appear in upper-carboniferous formations concentrated in three regions:

Upper Silesian Coal Basin
Lower Silesian Coal Basin
Lublin Coal Basin

The Upper Silesian Coal Basin is the largest black-coal mining center in the country. It extends over an area of approximately 4500 sq. km. Of this 1400 sq. km must be regarded as economically useless in terms of mining technology thought to be available by the year 2000, because of either a too heavy overlay or an insufficient coal content. Other 1350 sq. km of region require necessary geological surveys prior to extraction. Thus only 1750 sq. km remain properly developed for production with either already active mines or excavations now in progress.

So far those black-coal deposits have been mined which are most favorably embedded and most easily accessible. The average excavation depth was 501 m in 1977 and increases at an average rate of approximately 16 m annually. In other countries the annual increment of the excavation depth is smaller: only 9 m in England and 6 m in West Germany. The maximum excavation depth in Poland is 1100 m. The average excavation depth will be approximately 600 m by 1985 and approximately 700 m by 1990. In many countries the coal mining technology is regarded as not yet ready for economical excavation to depths below 1000-1200 m, and the problems in pit mining which arise because of higher temperatures, gaseousness and rock pressure have not yet been technically solved.

The average thickness of recoverable seams in the Upper Silesian Coal Basin is approximately 2.3 m. Seams up to 1.5 m thick contains 43 percent of the recoverable reserves, seams 1.5-3.0 m thick contain 31 percent and seams over 3.0 m thick contain 26 percent of them.

Over 70 percent of documented recoverable coal reserves in this Basin are grades 31-33 of stoker coal. Grades 34-37 of coke coal appear mainly within the territory of Rybnik and Zabrze associations. Grade 35 coal comes from the "Gliwice" mine as well as from mines in the southwestern part of the Rybnik Coal District.

The extracted coal is qualitatively very diverse. Coal from Brzeg, Słodo and Dolna Ruda beds has usually a high caloric value with low ash and sulfur contents. Coal from Gorna Ruda, Orzesk, Lazisk and Libiask beds has a calorific value of 4500-6000 kcal/kg, an average ash content ranging from over 10 to over 30 percent and a sulfur content of approximately 1.5 percent, with more than 1.5 percent in coal from the eastern part of the Basin.

The mining-geological conditions here are severe, inasmuch as favorably embedded deposits have already been depleted. The difficulties in coal extraction arise from an intricate tectonic structure (dense mesh of throws), variation of bed thickness and slope, frequent occurrence of local washout and an intensity of natural hazards (crumps, high methane concentrations and proneness to spontaneous combustion) not found elsewhere. Factors impeding the extraction are heaving floors and generally weak layers on a low ceiling.

In Poland all deposits meeting our profitability criteria are mined, regardless of their embedment conditions, not so in other coal mining countries and especially in West Europe and North America. There the profitability criteria are more liberal, allowing for abandonment of inefficient and very hazardous operations. Production is limited by closing those mines where operation is most difficult and thus the average labor productivity indicators for an entire region are raised. Consequently, recoverable deposits are depleted to a higher degree (approximately 45-50 percent) in Poland than in West Germany (37 percent).

The high degree of urbanization and land development within the coal districts of the Upper Silesian Basin cause large coal reserves to remain embedded in safety pillars. In fact, approximately 40 percent of all coal extracted comes from these pillars. This requires special methods of extraction and a widespread use of the flotation process. Thus extraction becomes more difficult and expensive. The vast experience which the Polish mining industry has and the special methods developed by the Polish scientific community for mining under built up surfaces contribute to safe scooping of pillars. Already over 50 million tons of coal have been extracted from the pillar under the city of Bytom and over 12 million tons from the pillar under the city of Katowice.

Intensive scooping of safety pillars has greatly reduced the capital investment on construction of new mines and tiers. Without this mode of extraction many mines would have to lower their production or be closed altogether, because of depletion of deposits in the rooms (e.g., "Gottwald" and "Szombierki" mines). This does not mean that extraction from pillars is easy. Every extraction causes some damage to the ground, buildings and other structural objects. These damages must be currently repaired and existing protective structures must be reinforced prior to extraction. It is to be noted that problems of soil and environmental protection become more crucial here. Strict observance of specific procedural standards in this area is absolutely necessary.

The Lower Silesian Coal Basin encompasses two districts: Wabrzych and Nowa Ruda. Extraction is carried here to depths of 800-900 m. The mines cover approximately 108 sq. km of the Basin territory. Recoverable seams are 0.7-1.2 m thick and a few of them even up to 2.0 m thick. This is coke coal (grades 34-37), lean coal (grade 38), anthracitic coal (grade 39) and anthracite (grade 42). A very intricate tectonic structure with a variable bed thickness as well as porphyry intrusions, atrophy of seams, gas and rock eruptions contribute to very severe mining-geological conditions here. The embedment conditions as well as the size and the quality of deposits are such, however, that coal extraction in this Basin will be maintained at the present level. Continuance of extraction despite the high cost is dictated by the need to cover the demand for special grades of coal within the overall balance.

The Lublin Coal Basin covers an area of over 4000 sq. km. It is explored since 1969 and mined since 1975. On account of the thick overlay, extraction is planned from much lower depths (below 800 m). Extracted will be deposits from the "Lublin" beds containing 10-23 on the average approximately 1.2 m thick recoverable coal seams.

For first mining operations has been chosen the so-called Central Coal District covering an area of approximately 230 sq. km, with geological exploration already completed. Further geological exploration will be done in the approximately 430 sq. km large Northern District and in the approximately 290 sq. km large Southern District. Comprehensive plan for mining in the Central Coal District include 7-8 coal seams containing approximately 70 percent of all so far undocumented recoverable reserves. The average thickness of these seams varies within the 0.85-1.77 m range.

Most of the deposits in the Lublin Coal Basin contain stoker coal. Several exploratory drill holes also indicate the presence of coke coal, but at low depths. The suitability of this coal for coking can be determined only after experimental evaluation on an industrial scale. Lublin coal deposits are characterized by rather favorable quality indicators: ash content 10-15 percent, calorific value approximately 6000 kcal/kg, and combustible sulfur approximately 1.0-1.2 percent. The mining-geological conditions, so far predicted on the basis of exploratory drilling, will be established in detail after access to the deposits has been gained through the pilot-extraction mine in Bogdanka.

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Poland has approximately 60 billion tons of documented recoverable geological black coal reserves. The recoverable reserves in already mined deposits (active mines and excavations now in progress) amount to approximately 27 billion tons or 45 percent of all recoverable reserves. Industrial reserves, i.e., the portion of recoverable reserves extractable by technical means available now or expected to become available within the next 20-30 years amount to approximately 12 billion tons or 45 percent of the already mined reserves.

Industrial reserves will steadily increase, owing to further investments and exploration. In addition to these documented recoverable reserves, one can estimate potential reserves of black coal amounting to approximately 135 billion tons. As exploratory drilling continues, these reserves will thus likely increase by approximately another 34 billion tons.

With a forecast targeted annual coal production of 300 million tons, Poland's reserves should last for over 200 years. It must be recognized, however, that deposits designated for future extraction are embedded in geologically tougher locations and the extraction costs will thus be higher.

Brown-coal deposits within Polish territory are associated mainly with tertiary formations. The coal-bearing regions cover a total area of approximately 150,000 sq. km. All known brown coal deposits are located in central, western and southwestern Poland. Up to 40 percent of the land with coal-bearing miocene has been explored during the postwar period. As a result, there has been established the existence of 16-20 billion tons of recoverable brown coal reserves. This relatively little exploration of coal-bearing miocene indicates a very real possibility that new brown coal deposits will be discovered. The most likely zone of stratified brown coal deposits stretches over the cis-Sudetes monocline and the cis-Sudetes block from Cybinka to Wrocaw. It must be assumed, however, that new deposits will be more difficult to extract, because of the deeper embedded coal floor and a worse overlay-to-coal ratio. It is thus necessary to greatly enlarge the scope of exploratory-geological and geophysical research as well as of drilling operations, in order to provide a basis for current investment decisions.

One can estimate today that earlier explored and recently discovered brown coal deposits make the forecast extraction of 250 million tons annually feasible. At such a production level the coal reserves should last at least till the year 2040 or for another 60 years.

Production levels have been established for the individual black coal basins in Poland after an analysis of reserves and embedment conditions as well as of the outlook for new mine excavations. The production capacity of the Upper Silesian Coal Basin has been found to be 250 million tons annually. On the other hand, there is no possibility of increasing the capacity of the Lower Silesian Coal Basin above the already attained level of 4 million tons annually. The main increase of production capacity must, therefore, occur in the Lublin Coal Basin. Determining the production capacity here will be possible after a more precise exploration of the deposits (through drilling) and experimental extraction in the first mines.

The growth of production capacity as far as black coal is concerned will be:

Year	1985	1990	2000
Poland - coal extraction (millions of tons) of this (percent) from	229	240	300
Upper Silesian Coal Basin	95	91	83
Lower Silesian Coal Basin	2	2	1.5
Lublin Coal Basin	3	7	15.5

The outlined program of increasing the production capacity requires that the construction of 32 new black coal mines be continued or begun during the 1981-2000 period.

As far as brown coal is concerned, the production capacity has been forecast to be

Poland - coal extraction (millions of tons) of this (percent) from	Year	1985	1990	2000
		83	140	250
existing mines		52	30	16
Bechatow mine		48	29	16
new mines		0	41	68

It follows from this forecast that the growth of the black coal production capacity depends on the construction of new mines, since increasing the production capacity of existing mines is practically impossible.

The program of further coal production, both black and brown coal, is of fundamental importance to Poland's near future. We know very well that further socio-economic growth depends on the supply of primary energy and can be anticipated only on the basis of the possibility of extracting domestic energy sources and importing crude oil, natural gas and fuel for atomic electric power plants.

Extraction of crude oil and natural gas in Poland cannot be increased because of insufficient reserves. There is also no basis for anticipating discovery of new deposits of these raw materials. The size of crude oil, natural gas and uranium imports will, on the other hand, depend on the country's financial resources and on guaranteed long-term contracts with oil and gas exporting countries. Hence it becomes necessary to attain the maximum, possible under our conditions, increase in the production of black and brown coal relatively so abundant in this country.

An essential factor contributing to socio-economic growth in this country will also be an increasingly reduced energy demand throughout the national economy, as a result of energy saving measures as well as of introduced less energy consuming technologies, also as a result of more efficient fuel and energy utilization.

Several prerequisites must be met, if the forecast increase of black coal and brown coal production is to be achieved. It is necessary to enlarge the scope of exploratory-geological and research activities for a better identification of reserves, which would make it possible to optimize production plans and to correctly invest the capital. Black coal and brown coal mines require huge amounts of capital and their construction to the level of operating at full capacity takes a relatively long time. One cannot expect an improvement in either respect very soon. Certain amount of capital and industrial backup must, therefore, be earmarked for the construction of new mines.

The next problem is proper equipment of black coal and brown coal mines with machines and tools. The potential capability to manufacture machinery for black coal mining is already high today. It must be further increased, however, to cover the demand for machinery according to the scheduled increase of coal production. Particularly low, relative to the demand, is the potential capability to manufacture machines and tools for brown coal mining. It needs to be raised intensively. Necessary is also import of basic machinery, to ensure the forecast enormous increase of brown coal production above its present level.

The predicted growth of black coal and brown coal mining will, furthermore, require an influx of new well trained personnel. This is especially crucial in the case of the Lublin Coal Basin, an area with no tradition yet in professional mining. One must consider that finding personnel, especially for pit mining, will not be easy. Difficulties in recruiting workers for underground operations are already encountered today in many European countries. It should be easier to recruit workers from strip mining of brown coal.

An extraordinarily important role in the growth of the Polish mining industry will have to be played by its scientific community, which must develop and prepare new technologies for pit mining: technologies of the year 2000. These technologies will have to aim at achieving a much higher productivity by methods of coal extraction not requiring the continuous presence of personnel at the shaft heads, by full automation of production processes, by reduction of energy and material consumption for these processes, by cutting excessive production costs and by better economic management of deposits.

The predicted increase of coal extraction will obviously require huge expenditures and efforts from the entire nation. There is no other way to create our own strong base of energy producing raw materials, however, and these expenditures and efforts will be the main indicators of the scale and the rate of the country's economic growth.

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PROVISIONS OF LAW ON FINANCES OUTLINED

Bucharest REVISTA ECONOMICA in Romanian No 28, 13 Jul 79 pp 11-12

[Article by Gh. Boulescu of the Ministry of Finance: "The Growth of the Role of the Financial Instruments"]

[Text] In the present form, the law on finances—amended, supplemented and adopted at the recent session of the MAN [Grand National Assembly]—reflects the improvements introduced into the field of finance as a result of the decisions of the plenum of the RCP Central Committee in March 1978 with regard to the improvement of economic and financial management and planning. As it says in the preamble to this law, the role and the functions of finances in ensuring the continual progress of the national economy, in stimulating the growth of material production, in optimally determining the proportions and rates of economic growth, in providing financial, monetary and valuta equilibrium, in sensibly allocating national income and in improving the standard of living of the whole populace are growing substantially under the conditions of the multilateral development of the whole national economy at a constant rate. The raising of the efficiency in all fields of activity to a higher level constitutes this law's imperative for the workers in the Ministry of Finance, banks, ministries, the other central and local bodies, and collective leadership bodies in the economic units, for all working people.

The main additions to the law refer to some essential aspects of financial activity, namely:

The Introduction of the Income and Expense Budget

The system of financial plans includes: the income and expense budgets of the socialist units, the state budget, the cash plan, the loan plans, the balance of the population's monetary incomes and expenses, the balance of foreign payments, the centralized financial plan and the financial plan in territorial form. Within this system, an important role goes to the income and expense budget, as an instrument for managing the financial activity in enterprises, centrals, institutions, ministries, the other central bodies, people's councils and cooperative and public organizations.

drawn up in close connection with the plan's economic indicators by the collective leadership body in each socialist unit and adopted, in accordance with the law, by the general assembly of working people, the income and expense budget at the enterprise's level includes all of its incomes and expenses, all of its own funds, all bank loans and all payments and the other financial relations. The enterprise's income and expense budget is integrated into the system of the income and expense budgets that are drawn up at a level of central, ministry or other central and local body and with the state budget, the loan plans and the centralized financial plan.

It is meant to function as an instrument for management of financial activity, for financial equilibrium and for control of economic and financial activity.

The Formation and Utilization of the Economic Units' Own Funds

The law establishes that at the state economic units their own funds are formed on the basis of profit, amortization of fixed assets, and other resources. At enterprises there are formed: the economic development fund, the fund of circulating funds, the fund for housing construction and other investments with a social character, the fund for participation by the working people in profits, the fund for social actions, and other funds. At centrals there are formed: the fund for the financing of investments at new enterprises and of important developments and the reserve fund for circulating funds.

At the same time, reflecting the application of the principle of the self-financing of the activity of each economic unit, the law also establishes the criteria for forming the funds, their purposes and the manner of utilization. In forming one's own funds for economic and social development the annual provisions in the sole national plan and the norms and quotas provided by law for dimensioning them are taken into account. For the cooperative and public units, the law also stipulates in principle, according to their specific character, which are their own funds that are formed by each particular unit and the resources for forming them, with the manner of formation and utilization having to be concretized by means of the statutes of the respective organizations.

The Obligation To Repay the Funds Received From Society

In accordance with the requirements of the principle of economic and financial self-management, the enterprises are obligated, on the basis of the provisions of the law on finances, to provide for the covering of expenses on the basis of their own incomes and to repay the monetary funds received from society. The obligation of repayment refers to the funds received for the financing of investments and to those received for the covering of the need for circulating funds by the new enterprises in the first year of activity.

The enterprises receive funds for investments, on founding, and for certain more important developments, established by law. The funds are received from

the central, out of the resources accumulated at it, and, as a supplement, from the budget. These funds are repaid by each receiving enterprise out of the amortization of fixed assets and the planned profits. The payments are made to the account for the obligation of repayment at the central to which the enterprise is subordinate and are used by it to form its own fund for the financing of investments.

In the first year of activity, the new enterprises receive from the state budget resources for covering the need for circulating funds. The funds advanced from the budget for this purpose are repaid by means of payments to the budget, in ensuing years, out of the fund of the enterprise's circulating funds.

The obligation to repay the funds received for investments and circulating funds applies to the enterprises beginning with 1979. It must be specified that the sums received in 1978 from centrals or from the state budget for the financing of investments are also subject to the obligation of repayment, to the extent to which they have not been covered out of the amortization paid to the central in that period, in accordance with the regulations in force.

The Manner of Allocation of Amortization

Together with profits, the amortization calculated by the enterprises is used as a resource for forming their own funds. Before the application of the measures to improve economic and financial management and planning, the amortization was usually accumulated at the central, as a resource for the financing of investments at the enterprises subordinate to it.

Under the new conditions, the amortization is allocated annually by each enterprise, in order, for the following purposes:

The repayment of the sums received from society for the financing of investments, up to the complete fulfillment of this obligation;

For forming the enterprise's economic development fund, within the limit of its expenses for investments, established on the basis of the provisions in the sole national plan and the income and expense budget;

The remainder of amortization is deposited in the central's own fund for the financing of investments at new enterprises and of important developments at those in operation.

The amortization relating to dwellings and other fixed assets with a social character is used with priority by each enterprise to form its own fund for housing construction and other investments with a social character, within the limit of the expenses for these projects, established on the basis of the annual provisions in the sole national plan and the income and expense budget. The remainder, if any, is deposited in the central's own fund.

Financing and Loans for Investment Projects

The earlier provision that each socialist unit's investments are carried out in accordance with the provisions of the sole national plan for economic and social development is retained in the present law. From a viewpoint of financing and loans, some new elements arise, in the sense of grouping the expenses for investments according to resources for financing, as follows:

- a) Investments at new enterprises, up to the putting of them into operation, and important developments at enterprises in operation. These developments are listed in Appendix 1 to the adopted law and are distinctly stipulated as such in the sole national plan. The investments in this category are financed out of the central's own fund for the financing of investments. The fund is formed from the amortization and profits received from enterprises for the account for the obligation to repay the sums received for investments, other resources established by law, and allocations from the state budget;
- b) Investments from the enterprise's economic development fund. The investments in the enterprise's plan, with the exception of those that, according to law, are considered important developments, are included in this category. The financing is provided from the enterprise's economic development fund, formed on the basis of its amortization and profits, and, as a supplement, there is the bank loan, repayable out of its own fund that is formed in ensuing periods;
- c) Housing construction and other investments with a social character, stipulated in the enterprise's investment plan. These investments are financed from the fund formed for this purpose out of amortization and profits and, in case of need, as a supplement, from bank loans, repayable in ensuing periods;
- d) The investments of the state institutions, which are financed from the state budget.

The new system of financing and loans for investments takes into account the growth in the degree of self-financing at enterprises, in the field of investments, and the strengthening of economic and financial self-management and of control over the efficiency in the utilization of funds.

The Improvement of the System of Financing for Circulating Funds

Within the new regulations it is established that the total need for circulating funds is established at each enterprise. It is established by means of the income and expense budget, on the basis of stocks and other expenses of the nature of circulating funds, dimensioned in accordance with the plan targets, the stock quotas and the quotas of circulating funds. This manner of operating will permit an optimum dimensioning of the need for circulating funds and the rational use of material and monetary resources. The leadership bodies of the enterprises have on hand wide possibilities of strengthening the self-management in this field.

The financing of circulating funds is expected to be done as follows:

At the new state economic units, in the first year of activity, the covering of the need for circulating funds is provided from the state budget;

At the economic units in operation, the total need for circulating funds, determined by means of the income and expense budget, under the conditions of the law, is financed from the enterprise's own fund for circulating funds and from other resources temporarily found at the unit's disposal. As a supplement to these resources, the enterprises can receive bank loans.

In this field too, an increase in the degree of self-financing of the economic units is achieved by forming on the basis of their own profits the fund of circulating funds, as a basic resource for the financing of circulating funds.

The Strengthening of Bank Control in the Granting and Utilization of Loans

The new regulation (like the earlier one) intends that the granting of loans is to be done within the limit of the loan plan. The loans are granted to the units within the framework of the approved ceilings.

The granting of loans is conditioned by the prior making of an analysis concerning the economic and financial position of the loan-receiving unit and concerning the provision of the conditions for repaying the loans on time. For the cases of nonprovision of the conditions for repaying the loans on time, the enterprise's higher-ranking bodies have the task of taking steps to improve the unit's economic and financial position. If these steps do not ensure repayment of the loans requested by enterprises, the banks can refuse to grant the loans. In addition, the law provides that the banks will refuse to grant the loans requested by the economic units in the cases in which the products that are made do not have sale ensured by means of contracts for the domestic market or for exportation, in accordance with the destination established by means of the plan.

The refusal of the banks to grant loans can also arise in the cases in which conditions for efficiently utilizing the funds are not created in the loan-requesting unit.

The bank control stipulated by law to be performed at the economic units with regard to the use of the granted loans in accordance with the purpose, the existence of material guarantees, the respecting of the conditions established by means of the loan contracts, the fulfillment of plan targets and the respecting of financial discipline has the mission of helping to increase the efficiency of the activity of the loan-receiving economic unit.

For the enterprises that frequently tie up their circulating funds, do not provide for the making of payments falling due out of their own funds, out of collections and out of approved current loans or do not repay the received

loans on the due date, the law provides a series of steps meant to bring about the elimination of these situations. Of them, we mention the following:

The granting by banks of loans for restoring solvency and for paying for supplies and for work and services performed by third parties, done properly and in accordance with the plan and the economic contracts;

The institution of prior control over the enterprise's payments, with the right of the banks to refuse to make those payments that violate the norms concerning the sensible management of material and monetary resources and concerning financial and plan discipline, and the introduction of accounting instruments for the respective unit, conditioned by the prior existence of reserves for payment;

The analysis--in the councils of working people--of the measures for the improvement of the organization of the process of supply, production and sale, the reduction of costs, the improvement of product quality, and the respecting of plan, financial and contractual discipline;

The institution of the system of economic and financial supervision of the activity of the respective unit, in the cases in which, despite the steps taken, its economic and financial position is not rectified and in the cases in which serious deviations from the norms for management of funds are found.

The Obligation To Achieve and Pay Budgetary Incomes

The new regulation provides a number of tasks in the area of achieving the incomes for the state budget. Of them, we mention the obligation that in making expenditures on the basis of the resources provided in the state budget all state economic units are to analyze the manner of achieving the planned budgetary incomes and to act to achieve them, under the conditions of maintaining the planned equilibrium in relations with the state budget.

The law provides that in the situations in which the budgetary incomes have not been achieved at the planned level by chief loan accountants the Ministry of Finance can block, to the extent of the unachieved amount, the provisions of budgetary loans in ensuing periods for the respective chief accountants.

The changes and additions in the law on finances, beyond those indicated, have in view the growth of the role of the financial instruments in the strengthening of worker self-leadership in the economic units and the strengthening of economic and financial self-management and of order and discipline in the utilization of material and monetary funds. The law also contains new provisions in other fields, such as, for example, that of financial and valuta relations, there being regulated matters concerning: the balance of foreign payments; the plan for collections and payments in valuta; the balance of foreign debts and commitments; loan and settlement relations with foreign countries; and others.

An updated legal framework concerning the performance of financial and banking activity, the law on finances, with the approved amendments and additions, is meant to bring about a qualitative rise in the work in this field. A thorough knowledge and the responsible application of its provisions constitute a current requirement for the whole financial and banking apparatus and for the other personnel in the economy.

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PROGRAM TO RAISE STANDARD OF LIVING

Bucharest REVISTA ECONOMICA in Romanian No 28, 13 Jul 79 pp 6-8

[Article by Grigore Vilceanu and Maria Molnar of the Institute of Socialist Economics: "The Party's Program for Raising the Standard of Living—an Expression of the Social and Human Purpose of Developing the Romanian Economy"]

[Text] The decision of the plenum of the National Council of Working People concerning the implementation of the program for raising the standard of living in the 1976-1980 period fits into the constant concern of our party and socialist state for providing, as national wealth increases, a continual rise in the material and spiritual well-being of our whole populace. By means of its provisions this program demonstrates, as Comrade Nicolae Ceausescu pointed out, that "the supreme goal of the party's policy is to provide better and better material and spiritual living conditions for the builders of socialism in our homeland, that the well-being of the whole nation represents the essence of the multilaterally developed socialist society."

On this occasion too it is confirmed that the multilateral development of the economy and, on this basis, the raising of the population's standard of living are creating the material conditions, the objective economic premises for the true, full affirmation of the humanism of the socialist society, representing the material support needed for the full affirmation of the personality of the new man, a conscious builder of the multilaterally developed socialist society.

The results obtained in implementing the decisions of the 11th party congress concerning the country's economic and social development constitute the basic condition for completely fulfilling and overfulfilling the objectives provided for the 1st stage (1976-1978) of raising the population's standard of living. The achievements in the first 3 years of the five-year period are significant from this viewpoint. Thus, from 1975 to 1978 there was a rise of 36.7 percent in industrial production, 21.3 percent in agricultural production, 27 percent in labor productivity in national industry, 30 percent in national income, and so on. Likewise, a review of the results obtained thus far attests to the constant concern for achieving all the elements contained

in the program for raising the standard of living: the incomes of the population, the supplying of food and nonfood goods to it, the development of services for the population, the development of the material base of cultural and artistic activity and of tourism, and the improvement of the conditions for working, for resting and for spending free time.

The substantial increase in the incomes of all categories of working people, unprecedented in the whole period of socialist construction, constitutes one of the main results obtained in the first stage of implementing the program for raising the standard of living. The main characteristic of the increase in incomes consists of the more marked growth in direct incomes from labor, an expression of the necessity of increasing the material incentives for those who work and of the putting into practice of the principles of socialist equity concerning distribution according to the quantity, quality and social importance of the labor, along with the substantial growth in the incomes that the population receives from the social consumption funds.

Regarding the growth of the salary of worker personnel, the main way of increasing the direct incomes from labor consists of the raising of basic wages by more than 32 percent in the 1976-1980 period, which, together with the awarding of levels, categories and gradations, of the increase for seniority and of other increases, will provide a rise of 40.3 percent in the average net nominal salary, as compared with the 29.5 percent that was expected in the five-year period. Taking into account the index of retail prices and of rates established at 105-106 percent for the current five-year period, the program estimates that the real salary will rise 32.3 percent in this period, as compared with the 18-20 percent that was established in the directives of the 11th congress and the 18-22 percent in the provisions of the five-year plan.

All worker personnel in the economy (about 7 million persons) were included in the first stage of growth in salaries (1 July 1977 to 1 June 1978, concluded 3 months earlier than the program's provisions), and a rise of 17 percent in basic wages on the average, representing more than half of the whole increase expected, was achieved. As is known, greater increases were achieved in the basic wage of workers (17.3 percent), and among them--there also being taken into account the necessity of improving the coefficients of hierarchization--priority was given to those in the basic branches of the economy: the mining industry (19.6 percent), the ferrous-metallurgical and coke-chemical industries (18.8 percent), building-assembly (18.7 percent), the machine building industry (17.7 percent), the chemical industry (17.6 percent) and so on. More substantial increases in salaries went to skilled workers (up to 23.3 percent in industry, up to 21 percent in building-assembly, and so on), foremen, and some categories of workers in trades or sub-branches that were put in higher systems of remuneration. The net basic wages according to classes and the allowances for administrative and specialized technical and economic personnel were raised 15.7 percent. After the first stage of growth the average net nominal salary in the whole economy amounted to 2,011 lei in 1978, surpassing by 416 lei the level achieved in

1975 and by 24 lei the provisions in the program, and the real salary amounted to 1,937 lei, it being 21.4 percent higher than in 1975, with the provisions for the whole five-year period thus being fulfilled in only 3 years.

The program's provisions concerning the peasantry's incomes were also overfulfilled substantially in the first stage, there thus being achieved another significant step in the direction of raising its standard of living and bringing the living conditions in villages closer to those in cities, an expression of the role that the peasantry and agriculture have in developing the economy and, on this basis, in increasing the well-being of the whole populace. The real incomes resulting from labor in the CAP agricultural production cooperative and on the individual farm, per active person, rose 25.6 percent from 1975 to 1978, surpassing the provisions of the program and of the five-year plan by 5 percent and more than 6 percent, respectively.

The continual growth of the social consumption funds constitutes proof of the special concern that our party and state have for the younger generation, for raising and educating it, and for providing, in the spirit of high socialist humanism, a peaceful old age, without worries, under the conditions of social recognition for the contribution made during active life to the country's economic and social development, as well as for providing the material conditions for raising the population's level of instruction and culture and its level of health care. In the first 3 years of the current five-year period the population's incomes from the social consumption funds rose nearly 20 percent, which permitted a substantial increase in pensions, the expansion of the pension system, of state allocations for children, of the aid given to mothers with many children, and so on, and the raising of the expenditures for education, health care, social assistance and so on.

In the 1976-1978 period, as a result of the measures for increasing the population's incomes and developing the production of consumer goods and as a result of the development of the service network, the retail sales of goods rose 29.5 percent and the services for the population rose 17.5 percent. For the main food and nonfood products, the growth in sales through socialist trade in the same period is presented as follows: 132.5 percent for meat and meat products, 120.4 percent for edible oil, 127.5 percent for milk, powdered milk and fresh dairy products, 126.9 percent for sugar, 144.0 percent for sugar products, 113.7 percent for fresh vegetables, 118.1 percent for fresh fruit, 138.4 percent for garments, 145.4 percent for knitwear, 127.8 percent for footwear, 151.8 percent for refrigerators, 124.9 percent for television sets, 141.4 percent for furniture, 160.4 percent for automobiles, and so on.

A comprehensive group of measures whose implementation by 1980 will help to raise the well-being of the whole population to a new level has been adopted with a view to the complete fulfillment of the program for raising the standard of living in the 1976-1980 period. Among them, in the forefront there is situated the achievement of the second stage of growth in salaries, spread over the period of 1 August 1979 to 1 December 1980, according to branches, depending on their complexity and the place and importance that they have in

the development of the Romanian economy and society. The average increase provided will be 13.6 percent. Starting on 1 December 1979, pensions will be increased, which will result in a rise of 17 percent since 1975 in the average retirement pension for full seniority. On 1 October 1979, the state allocations for children will increase, coming to be 30 percent higher on the average than in 1975, to which is added the 10 lei increase for each child, a sum covered on the basis of the measures to reduce military expenditures.

The evolution of the population's incomes, as a result of carrying out the program for raising the standard of living, is presented in Table 1.

Table 1. The Evolution of the Population's Incomes in the 1976-1980 Period

	1975	1978	1980
Average net nominal salary			
in lei	1,595	2,011	2,238
in % as compared with 1975	100	126.1	140.3
Index of prices and rates			
in %	100	103.8	105.0-106.0
Real salary			
in lei	1,595	1,937	2,111
in % as compared with 1975	100	121.4	132.3
Minimum basic wage			
in lei	1,114	1,290	1,425
in % as compared with 1975	100	115.8	127.9
Real incomes of the peasantry per active person			
in lei	990	1,243	1,290
in % as compared with 1975	100	125.6	130.3
Average retirement pension			
in lei	1,067	1,190	1,250
in % as compared with 1975	100	112.6	117.0
State allocations for children			
in % as compared with 1975	100	115.0	130.0

A comparison of the results obtained in increasing the population's incomes in the current five-year period with those obtained in the 1950-1975 period brings out strikingly the acceleration of their growth and the special concern devoted to the population's well-being, a natural consequence of the better and better results obtained in developing the economy (also see Table 2).

The growth of sales of goods through socialist and cooperative trade and on the peasant market and the development of services for the population, a result of constantly increasing the incomes of all categories of working people, of continually developing the production of consumer goods in a balanced manner and at a constant rate, of continually improving the material base for services and, on this basis, of systematically improving the supply of consumer goods and services from a viewpoint of quality and assortment, are creating the premises for raising the level of consumption and improving its

structure in step with the evolution of the needs of the members of society and with the imperatives of the achievement of rational consumption determined on scientific bases that provides the conditions for a healthy and civilized way of life, for the formation of the new man and the multilateral development of the human personality.

Table 2. The Growth of the Population's Incomes in the 1950-1980 Period

	(1950 = 100)			
	1965	1975	1978	1980
Average net salary	305	473	597	664
Minimum net salary	381	692	801	885
Real salary of worker personnel	225.6	325.2	394.8	430.2
Real incomes of the peasantry obtained in the CAP and on the Individual farm (per active person)	189.1	337.0	423.3	438.1
Incomes obtained by the population from the social consumption funds (per family)	500	11.4	13.2	15.2
		times	times	times
Real incomes of the population per capita	214.0	366.0	441.5	486.0

An analysis of the results obtained thus far in the evolution of the population's food consumption permits the noting of the trend--accentuated in the current five-year period--of a rise in the consumption of the main groups of foods and especially of those with a high nutritive value (meat, milk, eggs, vegetables and fruit), concomitant with the trend of a slowdown in the growth of the consumption of fats, especially of those of animal origin, and a reduction of the consumption of grain products. As a result, the food consumption of the population in our country is now, from a viewpoint of its content of calories and nutritive substances, at a level that satisfies quantitatively the requirements for nutrition in accordance with the physiological standards recognized on a world level. The growth of the consumption of foods with a high nutritive value, especially those of animal origin, of vegetables and fruit, and the growth of the degree of processing of the foods put at the disposal of the population also have as a consequence significant changes in the structure of food consumption in the direction of achieving a rational, balanced diet, under the conditions of the raising of the level of civilization in nutrition.

As a result of the continual development, especially in the past decade, of the production of light industry, the consumption of articles of clothing and footwear has also experienced a significant rise, approaching the level of consumption achieved in many economically advanced countries and providing for the satisfaction of the requirements of the working people, of the whole population in our country.

Regarding the consumption of nonfood goods, an analysis of the evolution of sales attests to a marked trend of growth in the volume and percentage of sales of durable goods, especially those earmarked for the furnishing and maintenance of the household and dwelling, for the lightening of housework

and for the useful and civilized spending of free time. The equipping of the households with durable goods is continually increasing as a result of these trends. Clearly, the party's concern for raising the standard of living is also expressed in the measures concerning the continual reduction of the workweek, the provision of better and better housing conditions, social and health assistance, and so on.

The measures contained in the program for raising the standard of living bring out very eloquently the indissoluble connection between progress in the country's economic and social development and the raising of the material and spiritual well-being of those who work. In this light, the exemplary fulfillment of the tasks for the current year and for the whole five-year period in all units in the economy and the mobilization of the work staffs and of each working person to utilize any reserve for reducing material and energy consumptions and for increasing production and productivity are noted as basic conditions for fulfilling the provisions for raising the standard of living. This proves once again that it is in the power of each of us to amplify the remarkable achievements that, as Comrade Nicolae Ceausescu stated, "in a short historical period have raised the country and our people to a standard of living that many neither thought nor dared to imagine," it is in the power of the working people to attain precisely the essential objective, outlined by the party, of proceeding to a new quality in all activity.

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